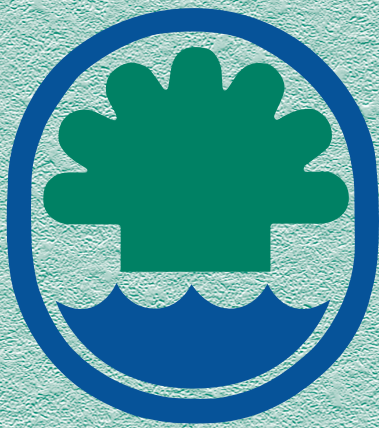


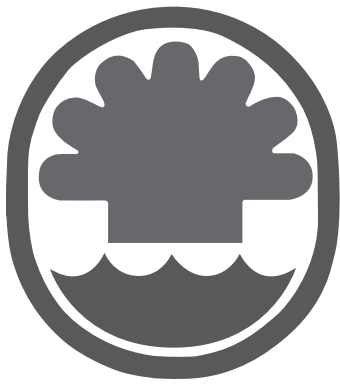


EPCOT FIRE PREVENTION CODE 2015 EDITION

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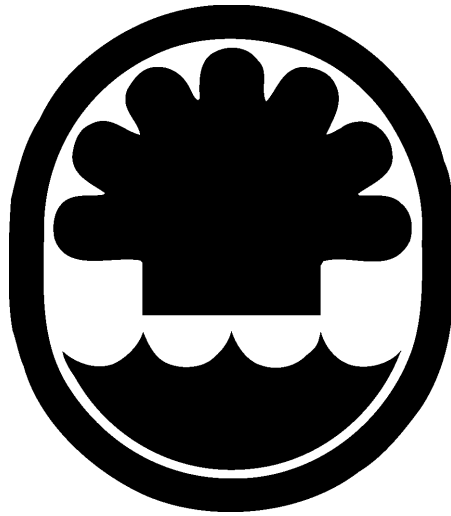
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FOREWORD

The purpose of the *EPCOT Fire Prevention Code*® is to serve as a comprehensive regulatory document to guide decisions aimed at protecting the public's life, health, safety and welfare in the built environment. This protection is provided through the adoption and enforcement of the performance-based provisions contained herein.

The use of performance-based requirements encourages the use of innovative building designs, materials and construction systems, while at the same time recognizing the merits of the more traditional materials and systems. This concept promotes maximum flexibility in building design and construction, as well as assuring a high degree of life safety.

The *EPCOT Fire Prevention Code* incorporates, by reference, nationally recognized consensus standards for use in judging the performance of materials and systems. This provides for the equal treatment of both innovative and traditional materials and systems, provides for the efficient introduction of new materials into the construction process and assures a high level of consumer protection.

PREFACE

Introduction

Internationally, Code Officials recognize the need for a modern, up-to-date *fire prevention* code addressing the design and installation of systems through requirements emphasizing performance. The *EPCOT Fire Prevention Code* is designed to meet these needs through model code regulations that safeguard the public's health and safety in all communities, large and small.

This comprehensive *fire prevention* code establishes minimum regulations for systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new system designs.

Marginal Markings

Solid vertical lines in the margins within the body of this Code indicate a change from the requirements of the 2009 edition, except where a change was minor. Deletion indicators (➡) are provided in the margin where *an entire section*, paragraph, *exception or table* has been deleted if the deletion resulted in a change of requirements.

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CHAPTER 1

GENERAL PROVISIONS

SECTION 101 GENERAL

101.1 Title. This document shall be known as the *EPCOT Fire Prevention Code*® and will be referred to as “this Code.”

101.2 Intent. This Code is intended to prescribe regulations consistent with nationally recognized practice for the reasonable protection of life and property from the hazards of fire and explosion due to the storage, use or handling of hazardous materials, substances and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises.

101.3 Scope. The provisions of this Code shall apply equally to new and existing conditions, except that existing conditions not in strict compliance with the requirements of this Code may be permitted to continue if it can be proven that they do not constitute a distinct hazard to life or property.

101.4 Responsibility. The Fire Official shall enforce the provisions of this Code and all State laws under his jurisdiction pertaining to the prevention, suppression or extinguishing of fires. The Fire Official shall have the powers of a police officer in performing his duties under this Code.

101.5 Organization and Functions. There is hereby established within the Reedy Creek Improvement District Emergency Services, a Fire Prevention Division under the direction of the Fire Official. The function of this Division shall be to inspect all buildings and premises as often as may be necessary for the purpose of ascertaining and causing to be corrected any conditions that could cause fire, endanger life from fire, or any violation of the provisions of this Code and any other law affecting fire safety.

SECTION 102 ENFORCEMENT AND RIGHT OF ENTRY

102.1 The Fire Official or his authorized representative may, at all reasonable times, have free access and right of entry to any building, whether completed or under construction, or to any property for the purpose of making an inspection or investigation to enforce any of the provisions of this Code.

102.2 No person, owner or occupant of any building or premise shall fail, after proper credentials are displayed, to permit entry into any building or onto any property by the Fire Official or his authorized representative for the purpose of inspections pursuant to this Code. Any person violating this Code shall be guilty of a misdemeanor.

SECTION 103 INSPECTIONS

103.1 The Fire Official shall cause to be inspected all buildings and premises, including such other hazards or material items, for the purpose of ascertaining and causing to be corrected any conditions that would reasonably tend to cause fire

or contribute to its spread, or any violation of the purpose or provisions of this Code and of any other law or standard affecting fire safety.

103.2 Unsafe Building Defined. All buildings shall be considered unsafe buildings that are, or that hereafter become unsafe, unsanitary or deficient in exit facilities; or that constitute a hazard from fire or windstorm; or that are otherwise dangerous to human life or public welfare by reason of illegal or improper use, occupancy or maintenance; or that do not comply with the provisions of applicable codes; or that have been substantially damaged by the elements, acts of God, fire or explosion, or other cause; or that are incomplete buildings for which building permits have expired. All such buildings, deemed to be unsafe by the Building Official, are hereby declared to be public nuisances and shall be demolished and removed from the premises concerned or shall be made safe and sanitary in a manner required by the Building Official and as provided in this Section and other applicable laws and regulations of the Reedy Creek Improvement District (the District).

103.3 When an apparent structural hazard is caused by the faulty installation, operation or malfunction of any of the items or devices listed in Subsection 104.1, the Fire Official shall immediately notify the Building Official who shall investigate such hazard and shall cause such hazard to be abated as required by the *EPCOT Building Code*®.

SECTION 104 DANGEROUS CONDITIONS

104.1 Whenever the Fire Official or his duly authorized representative shall find in any building or upon any premises dangerous or hazardous conditions or materials, as follows, there shall be issued such notice or orders to remove or remedy the conditions as may be necessary for the protection of life and property from fire and smoke.

- (a) Dangerous or unlawful amounts of combustible or explosive, or otherwise hazardous, materials.
- (b) Hazardous conditions arising from defective or improperly installed equipment for handling or using combustible or explosive, or otherwise hazardous, materials.
- (c) Dangerous accumulations of rubbish, waste paper, boxes, shavings or other highly combustible materials.
- (d) Accumulations of dust or waste material in air-conditioning or ventilating systems, or of grease in kitchen or other exhaust ducts, or inadequate clearances to unprotected combustible material from hoods, grease extractors and ducts.
- (e) Obstructions to or on fire escapes, designated access openings in exterior walls for fire services use, stairs, passageways, doors or windows, liable to interfere

GENERAL PROVISIONS

with the operations of the Fire Official having jurisdiction or egress of occupants in case of fire.

- (f) Any building or other structure that, for want of repairs, lack of adequate exit facilities, automatic or other fire alarm apparatus, or fire-extinguishing equipment, or by reason of age or dilapidated condition, or from any other cause, creates a hazardous condition.

104.2 Whenever the Fire Official or his duly authorized representative deems any heat-producing devices, electric fixture or any appurtenance thereto, or anything regulated under a nationally approved standard, in or upon any building, structure or premises not specifically mentioned in this Code, to be defective or unsafe so as to create an immediate hazard, he shall serve upon the owner or the person having control of the property, a written notice to repair or alter as necessary and shall notify any other authority enforcing codes regulating such equipment. He may affix a condemnation tag prohibiting the use thereof until such repairs or alterations are made. When affixed, such tag may be removed only by the order of such Fire Official or his duly authorized representative and may be removed only when the hazard to which the order pertains has been eliminated in an approved manner. Until removed that item or device, which has caused the hazard, shall not be used or be permitted to be used.

104.3 When the Building Official is notified by the Fire Official that the corrections needed with a building are subject to the requirements of the *EPCOT Building Code*, the Building Official shall notify the Fire Official when the corrections have been completed.

SECTION 105 SERVICE OF ORDERS

105.1 The service of orders for the correction of violations of this Code shall be made upon the owner, occupant or other person responsible for the conditions, either by delivering a copy of same to such person or by delivering the same to and leaving it with any person in charge of the premises, or in case no such person is found upon the premises, by affixing a copy thereof in a conspicuous place on the door to the entrance of the said premises. Whenever it may be necessary to serve such an order upon the owner of premises, such order may be served either by delivering to and leaving with the said person a copy of the said order, or, if such owner is absent from the jurisdiction of the officer making the order, by sending such copy by certified or registered mail to the owner's last known post office address.

105.2 If buildings or other premises are owned by one person and occupied by another, under lease or otherwise, the orders issued in connection with the enforcing of this Code shall apply to the occupant thereof, except where the rules or orders require the making of additions to or changes in the premises themselves, such as would immediately become real estate and be the property of the owner of the premises; in such cases, the rules or orders shall affect the owner and not the occupant, unless it is otherwise agreed between the owner and occupant.

105.3 Compliance. Any person operating or maintaining any occupancy, premises or vehicle subject to this Code who shall

permit any fire hazard to exist on premises under his control or who shall fail to take immediate action to abate a fire hazard when ordered or notified to do so by the Fire Official or his duly authorized representative shall be guilty of a misdemeanor.

105.4 Any order or notice issued or served as provided in this Code shall be complied with by the owner, operator, occupant or other person responsible for the condition or violation to which the order or notice pertains. Every order or notice shall set forth a time limit for compliance dependent upon the hazard and danger created by the violation. In cases of extreme danger to persons or property, immediate compliance shall be required. If the building or other premises is owned by one person and occupied by another, under lease or otherwise, and the order or notice requires additions or changes in the building or premises, such as would immediately become real estate and be the property of the owner of the building or premises, such order or notice shall be complied with by the owner unless the owner and occupant have otherwise agreed between themselves, in which event the occupant shall comply.

105.5 No person shall remove a notice affixed under Subsection 104.2 without authority to do so.

105.6 No person shall use a building, premises or object in violation of a notice affixed under Subsection 104.2.

SECTION 106 INVESTIGATION OF FIRES

106.1 The Fire Official or his duly authorized representative shall investigate promptly the cause, origin and circumstances of each and every fire occurring in his jurisdiction involving loss of life or injury to person, or destruction or damage to property. If it appears that such fire is of suspicious origin, the Fire Official shall take immediate charge of all physical evidence relating to the cause of the fire and shall pursue the investigation to its conclusion. A report, in writing, shall be made of all facts and findings relative to each investigation.

106.2 Records. The Fire Department shall keep a record of all fires occurring within its jurisdiction and of all facts concerning the same, including statistics as to the extent of such fires and the damage caused thereby, together with such other information as may be required. Such records shall be retained for not less than 25 years.

SECTION 107 ALTERNATIVE MATERIALS AND METHODS

107.1 The provisions of this Code are not intended to prevent the use of any material or method, provided any such alternative has been approved and its use authorized by the Fire Official. The Fire Official shall approve any such alternative, provided he finds that the proposed design, use or operation is satisfactory and complies with the intent of this Code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this Code in quality, strength, effectiveness, fire resistance, durability and safety. The Fire Official shall require that sufficient evidence or proof be submitted to substantiate any claim that

may be made regarding any such use. Any approval under this Section shall also be subject to the approval of the Building Official whenever the alternative material or method involves matters regulated by the *EPCOT Building Code*.

SECTION 108 REQUIREMENTS

108.1 Any requirement necessary for the fire safety of any existing or proposed building or structure, or for the safety or health of the occupants thereof, not specifically covered by this Code, shall comply with nationally recognized standards.

SECTION 109 BUILDING PERMITS AND CERTIFICATE OF OCCUPANCY REQUIREMENTS

109.1 The Fire Official or his duly authorized representative shall approve all applicable provisions of plans, in writing, prior to the issuance of building permits by the Building Official as set forth in the *EPCOT Building Code*.

109.2 The Fire Official or his duly authorized representative shall approve all applicable installations, in writing, prior to the issuance of a Certificate of Occupancy by the Building Official as set forth in the *EPCOT Building Code*.

SECTION 110 LIABILITY

110.1 Any officer or employee, or member of the Board of Appeals, charged with the enforcement or interpretation of this Code, acting for the applicable governing body in the discharge of his duties, shall not thereby render himself personally liable, and he is relieved from all personal liability for any damage that may accrue to persons or property as a result of any act required or permitted in the discharge of his duties. Any suit brought against any officer or employee because of such act performed by him in the enforcement of any provision of this Code shall be defended by the legal counsel of the District until the termination of the proceedings.

SECTION 111 BOARD OF APPEALS

111.1 The board of appeals shall be as set forth in Section 106 of the *EPCOT Building Code*.

CHAPTER 2

RECOGNIZED STANDARDS AND PUBLICATIONS

SECTION 201 GENERAL

201.1 The provisions of this Code may not be applicable to every situation involving the protection of life and property from the hazards of fire, smoke and/or explosion. In this situation, compliance with nationally recognized standards or publications as listed in the *EPCOT Building Code* may be accepted as compliance with this Code.

CHAPTER 3

PERMITS

SECTION 301 GENERAL

301.1 A permit shall constitute permission to maintain, store or handle materials, or to conduct processes that produce conditions hazardous to life and property, or to install equipment used in connection with such activities.

301.2 Such permit shall not be a substitute for any license required by law.

301.3 A permit shall not be transferable and any change in use or conditions shall require a new permit.

301.4 A permit shall continue until revoked or for such period of time as designated at the time of issuance.

SECTION 302 PERMITS REQUIRED

302.1 The following circumstances require a permit:

- (a) Tents.
- (b) Control burning.
- (c) Special effects.
- (d) Fireworks/pyrotechnics.
- (e) Special convention activities.
- (f) Kitchen chemical-extinguishing systems.

SECTION 303 APPLICATION FOR PERMIT

303.1 The application for a permit shall be made in the form prescribed by the Fire Official.

303.2 The application for a permit shall contain the following information:

- (a) Date of application.
- (b) Statement of intended activities or operations to be conducted.
- (c) Requested period of time for permit to be valid.
- (d) Applicant's name and title printed.
- (e) Signature of applicant.

303.3 The Fire Official may require the applicant to submit plans, specifications, tests or other data in conjunction with the permit application.

SECTION 304 INSPECTION

304.1 Before a permit may be issued, the Fire Official or his authorized representative shall inspect the activities or operations to be conducted.

304.2 In cases where laws or regulations enforceable by departments other than the Fire Department are applicable,

joint approval shall be obtained from all departments concerned.

SECTION 305 CONDITIONS OF PERMITS

305.1 The Fire Official shall act upon an application for permit without unreasonable delay, and, when issued, such permit shall remain on the premises designated therein and shall at all times be subject to inspection.

305.2 Whenever the provision of this Code requires more than one permit for the establishment or location, such permits may be combined into a single permit, but each provision shall be listed in the permit.

SECTION 306 COMPLIANCE WITH PERMIT

306.1 All permits issued under this Code shall require that the applicant, his agents and employees shall carry out the proposed activity in compliance with all the requirements of this Code and any other laws or regulations applicable thereto, whether specified in the permit or not and in complete accordance with the approved plan and application.

SECTION 307 REVOCATION OF PERMIT

307.1 The Fire Official may revoke a permit issued under this Code when it is found by inspection or otherwise that:

- (a) The permit is used for a location or establishment other than that for which it was issued.
- (b) The permit is used for a condition or activity other than that listed in the permit.
- (c) Conditions and limitations set forth in the permit have been violated.
- (d) There have been any false statements or misrepresentations as to a material fact in the application for permit or plans submitted or a condition of the permit.

SECTION 308 FAILURE TO OBTAIN A PERMIT

308.1 Whenever a person(s) commences work prior to obtaining a permit as required by this Code, the Fire Official, or his authorized representative, may order such work stopped, or may order the violation corrected by notice, in writing, served to the person(s) engaged in doing or causing such work to be done, and such person(s) shall immediately stop the work until authorized by the Fire Official to proceed.

CHAPTER 4

DEFINITIONS AND ABBREVIATIONS

SECTION 401 TENSE, GENDER AND NUMBER

401.1 Words used in the present tense include the future. Words in the masculine gender include the feminine and neuter. Words in the feminine and neuter gender include the masculine. The singular number includes the plural and the plural number includes the singular.

SECTION 402 DEFINITIONS AND ABBREVIATIONS

402.1 For the purpose of this Code, certain abbreviations, terms, phrases, words and their derivatives shall be construed as set forth in this Chapter and as specified in other Chapters of this Code.

AEROSOL. A substance dispensed from a pressurized container.

AGA. American Gas Association.

AIA. American Insurance Association.

AIR-SUPPORTED STRUCTURES. A structure where shape is maintained by air pressure and occupants of the structure are within the elevated pressure area.

ALTER OR ALTERATION. Any change, addition or modification in the construction, installation or occupancy of a building.

AMUSEMENT RIDE STRUCTURE. Any mechanically operated device used to convey persons in any direction as a form of amusement. When the shelter enclosing the amusement device is an integral part of the conveyance, it shall not be considered as a building.

ANSI. American National Standards Institute.

APARTMENT. A room or suite of rooms that is occupied or intended to be occupied, or that is designed to be occupied, by one family for living and sleeping.

APARTMENT HOUSE. Any building or part thereof designed, built, rented or leased to be occupied, or that is being occupied as the home or residence of more than three families living independently of each other and doing their own cooking in the housekeeping unit they occupy.

API. American Petroleum Institute.

APPLICABLE GOVERNING BODY. The District, or other political government subdivision or entity, authorized to administer and enforce the provision of this Code, as adopted or amended.

APPROVED. Approved by the Fire Official.

ASHRAE. Formerly known as American Society of Heating, Refrigeration and Air-Conditioning Engineers.

ASME. American Society of Mechanical Engineers.

ASSEMBLY. The congregation or gathering of 50 or more persons in one room or space for such purposes of recreation, entertainment, worship, amusement, awaiting transportation, instruction, deliberation, and drinking and dining.

ASTM. ASTM International.

AUTOMATIC FIRE ALARM SYSTEM. A system that automatically detects a fire condition and activates a fire alarm signal device.

AUTOMOTIVE SERVICE STATION. A place of retail business at which outdoor refueling is carried on using fixed dispensing equipment connected to underground storage tanks by a closed system of piping, and at which goods and services generally required in the operation and maintenance of motor vehicles and fulfilling of motorist needs may also be available.

AWS. American Welding Society.

BARREL. A volume of 42 gallons.

BTU. British thermal unit. The quantity of heat required to raise the temperature of 1 pound of water 1°F.

BUILDING. Any structure erected for the support, shelter of enclosure of persons, animals or chattel, or property of any kinds.

BUILDING CODE. The *EPCOT Building Code*.

BUILDING, EXISTING. A building erected prior to the adoption of the *EPCOT Building Code*, or one for which a legal building permit has been issued.

BUILDING LINE. The line, established by law, beyond which a building shall not extend, except as specifically provided by law.

BUILDING OFFICIAL. The designated authority charged with the administration and enforcement of the *EPCOT Building Code* or his duly authorized representative.

BULK PLANT. That portion of a property where flammable or combustible liquids are received by tank vessel, pipe line, tank car or tank vehicle, and are restored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipe line, tank car, tank vessel or container.

CARGO TANK. Any container having a liquid capacity in excess of 100 gallons, used for carrying flammable or combustible liquids, liquefied petroleum gas or hazardous chemicals, and mounted permanently or otherwise upon a tank vehicle. The term "cargo tank" does not apply to any container used solely for the purpose of supplying fuel for propulsion of the vehicle upon which it is mounted.

CELLULOSE NITRATE PLASTICS (PYROXYLIN). Any plastic substance, material or compound, other than cellulose nitrate film or guncotton, having cellulose nitrate as a base, or whatever name known, when in the form of blocks, slabs, sheets, tubes or fabricated shapes.

DEFINITIONS AND ABBREVIATIONS

CLOSED CONTAINER. A container sealed by a lid or other device such that neither liquid nor vapor can escape from it at ordinary room temperatures.

COMBUSTIBLE LIQUID. A liquid having a flash point at or above 140°F, and below 200°F, and shall be known as a Class III liquid.

COMBUSTIBLE WASTE MATERIAL. Magazines; books; trimmings from lawns, trees and flower gardens; pasteboard boxes; rags; paper; straw; sawdust; packing material; shavings; boxes; and all rubbish and refuse that will ignite through contact with flames of ordinary temperatures.

COMPRESSED GAS. Any mixture or material having in the container either an absolute pressure exceeding 40 pounds per square inch (psi) at 70°F or an absolute pressure exceeding 104 psi at 130°F, or both; or any liquid flammable material having a vapor pressure exceeding 40 psi at 100°F.

CONTAINER. Any can, barrel, drum or portable tank (except stationary tanks).

CONVERSION RANGE OIL BURNER. An oil burner designed to burn kerosene, range oil or similar fuel. Such burner is intended primarily for installation only in a stove or range, a portion or all of which originally was designed for the utilization of solid fuel and that is flue connected.

CORROSIVE LIQUID. Those acids, alkaline caustic liquids and other corrosive liquids that, when in contact with living tissue, will cause severe damage of such tissue by chemical action; or, in case of leakage, will materially damage or destroy other containers of other hazardous commodities by chemical action and cause the release of their contents; or are liable to cause fire when in contact with organic matter or with certain chemicals.

CRUDE PETROLEUM. Hydrocarbon mixtures that have a flash point below 150°F and have not been processed in a refinery.

DECORATIVE MATERIAL. Materials, such as curtains, draperies, streamers and surface coverings, applied over the building interior finish for decorative, acoustical or other effect, and also cloth, cotton batting, straw vines, leaves, trees and plastics used for decorative effect, but it shall not include floor coverings, ordinary window shades, nor material one-fortieth of an inch or less in thickness applied directly to and adhering tightly to a base.

DIP TANK. A tank, vat or container of flammable or combustible liquid in which articles or material are immersed for the purpose of coating, finishing, treating or similar processes.

DISTRICT. The Reedy Creek Improvement District.

DORMITORY. A room in other than a Group R-3 occupancy having separate sleeping accommodations for more than three persons.

DUST. Pulverized particles that, if mixed with air in the proper proportions, become explosive and may be ignited by a flame or spark.

DWELLING. A building occupied exclusively for residential use having not more than three dwelling units; or one or two dwelling units with a total of not more than four boarders

or roomers in these units served with meals or sleeping accommodations.

DWELLING UNIT. One or more rooms arranged for the use of one or more persons as a single housekeeping unit, with facilities for cooking, living and sleeping, and with sanitary facilities as required in the *EPCOT Plumbing Code*®.

ELECTRICAL CODE. The *EPCOT Electrical Code*®.

EXIT. That part of a means-of-egress system that is separated from all other spaces of a building or structure by construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits.

EXIT ACCESS. That part of a means-of-egress system leading from any occupied portion of a building or structure to an exit.

EXIT DISCHARGE. That part of the means-of-egress system between the termination of an exit and a public way.

EXPLOSIVE. Any chemical compound or mechanical mixture, which is commonly used or intended for the purpose of producing an explosion, that contains any oxidizing and combustible units, or other ingredients, in such proportions, quantities or packing that an ignition by fire, friction, concussion, percussion or detonator of any part of the compound or mixture may cause such a sudden generation of highly heated gases that the resultant gaseous pressures are capable of producing destructive effects on contiguous objects, or of destroying life and limb.

FIRE BARRIER. A line or barricade designed to keep unauthorized persons out of the area of a fire.

FIRE CAUSE. A condition or effect that has permitted the combining of fuel and a heat source in such manner as to create an uncontrolled fire.

FIRE DEPARTMENT. The Reedy Creek Improvement District Emergency Services.

FIRE DIVISION WALL. A fire-resistive wall that may have protected openings, which restricts the spread of fire, and extends continuously from the foundation to or through the roof in accordance with the *EPCOT Building Code*.

FIRE DOOR. A door and its assembly so constructed and assembled in place as to give protection against the passage of fire.

FIRE HAZARD. Any thing or act that increases or may cause an increase of the hazard or menace of fire to a greater degree than that customarily recognized as normal by persons in the public service regularly engaged in preventing, suppressing or extinguishing fire; or that may obstruct, delay, hinder or interfere with the operation of the Fire Department or the egress of occupants in the event of fire.

FIRE MARSHAL. Deputy Manager charged with the administration of the Fire Prevention Division under the direction of the Fire Official.

FIRE NUISANCE. Any thing or any act that is annoying, unpleasant, offensive or obnoxious because of fire.

FIRE OFFICIAL. Manager or other person charged with the administration of the Fire Department serving the District or his duly authorized representative.

FIRE PREVENTION DIVISION. A Division of the Reedy Creek Emergency Services charged with the function to inspect all buildings and premises as often as may be necessary for the purpose of ascertaining and causing to be corrected any conditions that could cause fire, endanger life from fire, or any violation of the provisions of this Code or any other law affecting fire safety.

FIRE PROTECTION APPLIANCE. Apparatus or equipment provided or installed close at hand for immediate use in the event of fire.

FIRE-RESISTANCE RATING. The time, in hours, that the material or construction will withstand the standard fire exposure as determined by a fire test made in conformance to the *EPCOT Building Code*.

FLAME RETARDANT. Any approved chemical, chemical compound or mixture that, when applied in an approved manner to any fabric or other material, will render such fabric or material incapable of supporting combustion.

FLAME SPREAD. The propagation of flame over a surface as specified in the *EPCOT Building Code*.

FLAMMABLE LIQUID. Any liquid having a flash point below 140°F and a vapor pressure not exceeding 40 psi (absolute) at 100°F.

FLAMMABLE LIQUIDS. Shall be divided into two classes of liquids as follows:

Class I. Shall include those having flash points below 100°F and may be subdivided as follows:

Class IA. Shall include those having flash points below 73°F and boiling points below 100°F.

Class IB. Shall include those having flash points below 73°F and boiling points at or about 100°F.

Class IC. Shall include those having flash points at or above 73°F and below 100°F.

Class II. Shall include those having flash points at or above 100°F and below 140°F.

When artificially heated to temperatures equal to or higher than their flash points, Class II and III liquids shall be subject to the applicable requirements for Class I and II liquids. The provisions in this Code shall also be applied to high flash-point liquids, which otherwise would be outside of its scope when they are so heated.

FLAMMABLE MATERIAL.

- (a) Any material that will readily ignite from common sources of heat; and
- (b) Any material that will ignite at a temperature of 600°F or less.

FLAMMABLE SOLID. A solid substance, other than one classified as an explosive, that is liable to cause fires through friction, absorption of moisture or spontaneous chemical changes, or as a result of retained heat from manufacturing or processing.

FLASH POINT. The minimum temperature, in degrees Fahrenheit, at which a flammable liquid will give off flammable vapor as determined by appropriate test procedure and apparatus as specified by this Code.

FLOOR AREA. The area included within surrounding walls of a building exclusive of vent shafts and courts.

FUEL OIL. Kerosene or any hydrocarbon oil conforming to nationally recognized standards as having a flash point not less than 100°F.

FUMIGANT. Any substance that, by itself or in combination with any other substance, emits or liberates a gas, fume or vapor used for the destruction or control of insects, fungi, vermin, germs, rodents or other pests, and shall be distinguished from insecticides and disinfectants.

FUMIGATION. The use of any substance that emits or liberates a gas, fume or vapor used for the destruction or control of insects, fungi, vermin, germs, rodents or other pests, and shall be distinguished from insecticides and disinfectants.

GARAGE. A building, other than an open carport structure, or part thereof in which a motor vehicle, containing a flammable liquid in its fuel storage tank, is stored, housed, kept, repaired or serviced.

GARAGE, AUTOMOTIVE SERVICE. A garage where no repair work is done, except the exchange of parts and maintenance requiring no open flame, cutting, welding or use of highly flammable liquids.

GARAGE, BASEMENT PARKING. A parking garage having exterior walls around more than 50 percent of the perimeter.

GARAGE, ENCLOSED PARKING. A parking garage having exterior walls around more than 50 percent of the perimeter.

GARAGE, MECHANICAL ACCESS. See the *EPCOT Building Code*.

GARAGE, OPEN-AIR PARKING. A garage having at least 50 percent of the perimeter open to the air at each story.

GARAGE, PARKING. A garage used solely for parking motor vehicles.

GARAGE, PRIVATE. A building or part thereof not more than 1,000 square feet in area, in which only motor vehicles used by the owner or tenants of the building are stored or kept.

GARAGE, RAMP ACCESS. See the *EPCOT Building Code*.

GARAGE, REPAIR. A garage where major repairs can be made to three or more motor vehicles at the same time.

HABITABLE ROOM. A room in a residential occupancy used for living, sleeping, cooking and eating, but excluding bath, storage and service area, and corridors.

HAZARDOUS MATERIALS. Those chemicals or substances that are physical hazards or health hazards.

HIGHLY TOXIC MATERIALS. Materials so toxic to man as to afford an unusual hazards to life and health.

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HOTEL. A building having facilities accommodating four or more transient guests, with rooms intended or designed to be rented or used for sleeping.

I.C.C. CONTAINER. Any container approved by the Interstate Commerce Commission for shipping any liquid, gaseous or solid material of a flammable, toxic or other hazardous nature.

I.M.E. Institute of Makers of Explosives.

INCINERATOR. A structure, or portion thereof, container, device or other appliance designed, used or intended to be used for the disposal of combustible rubbish by burning.

LIQUEFIED PETROLEUM GAS (LP GAS). Any material that is composed predominantly of the following hydrocarbons or mixtures of them: propane, propylene, butane (normal butane or isobutane) and butylenes.

LIQUEFIED PETROLEUM GAS EQUIPMENT. All containers, apparatus, piping (not including utility distribution piping systems), and equipment pertinent to the storage and handling of LP gas. Gas-consuming appliances shall not be considered as being LP-gas equipment.

LISTED. Equipment or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other recognized organization concerned with product evaluation that maintains periodic inspection of production of listed equipment or materials; and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

LODGING HOUSE. A building or part thereof with accommodations for not more than four guests where rent is paid in money, goods or labor. A lodging house shall comply with the requirements of the *EPCOT Building Code*.

MAGAZINE. Any building or structure used for the storage of explosives.

MAGNESIUM. The pure metal or alloys of which the majority part is magnesium.

MARINE SERVICE STATION. Shall include those portions of properties where flammable or combustible liquids and LP gases used as fuel for floating crafts are stored and dispensed from fixed equipment on shores, piers, wharfs, floats or barges into the fuel tanks of floating crafts; and shall include all facilities used in connection therewith, and shall be considered as intended for servicing small crafts.

M.C.A. Manufacturing Chemists Association.

MECHANICAL CODE. The *EPCOT Mechanical Code*®.

MOTEL. Shall mean “hotel” as defined in this Code.

MULTIPLE DWELLING. Has the same meaning as “apartment house.”

NFPA. National Fire Protection Association.

NONCOMBUSTIBLE MATERIAL. As applied to materials used in building construction, is a material that, in the form in which it is used, falls into one of the following groups (a), (b) or (c). Material shall not be classed as noncombustible when it is subject to increase in combustibility or flame

spread rating beyond the limits established herein, through effects of age, moisture or other atmospheric condition.

(a) Materials no part of which will ignite and burn when subject to fire.

(b) Materials having a structural base of noncombustible material as defined in Paragraph (a), with a surfacing not more than 1/8 inch thick having a flame spread rating of not more than 50.

(c) Materials other than those described in Paragraphs (a) and (b) having a flame spread rating of not more than 25 without evidence of continued progressive combustion, and of such composition that surfaces that would be exposed by cutting through the material in any way would not have a flame spread rating of more than 25 without evidence of continued progressive combustion.

(d) As used in Paragraphs (a), (b) and (c), flame spread rating refers to the rating obtained when the material is tested in accordance with the *EPCOT Building Code*.

OCCUPANCY. Is the purpose for which a building or part thereof is used or intended to be used.

OIL-BURNING EQUIPMENT. An oil burner of any type together with its tank, piping, wiring, controls and related devices, and shall include all conversion oil burners, oil-fired units, and heating and cooking appliances, but exclude those exempted by this Code.

OIL-FIRED UNIT. A heating appliance equipped with one or more oil burners, and all the necessary safety controls, electrical equipment and related equipment manufactured for assembly as a complete unit. This definition does not include kerosene stoves or oil stoves.

OWNER. Any person, agent, firm or corporation having a legal or equitable interest in the property.

OXIDIZING MATERIALS. Substances that readily yield oxygen to stimulate combustion.

PARTITION. An interior wall that subdivides spaces with a story, or the attic or basement of a building. A partition may be permanent or temporary.

PENTHOUSE. An enclosed structure, other than a roof structure, located on a roof, extending not more than 12 feet above a roof.

PERMIT. Is an official document or certificate issued by the Fire Official authorizing performance of a specified activity.

PERSON. A natural person, his heirs, executors, administrators or assigns, and also includes a firm, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid.

PERSON, AMBULATORY. One who is capable of leaving a fire area within a reasonable length of time without assistance of any kind in the event of an emergency.

PERSON, NON-AMBULATORY. One who is incapable of leaving a fire area within a reasonable length of time without assistance in the event of an emergency.

PIPED DISTRIBUTION SYSTEM. A central supply system with controlling equipment, and a system of piping extending to one or more points, where liquids or gases are

used and a suitable station's outlet valve is located at each use point.

PLENUM. An air compartment or chamber to which one or more ducts are connected and forms part of an air-distribution system.

PLUMBING CODE. The *EPCOT Plumbing Code*.

POISONOUS GAS. Any gas of such nature that a small amount, when mixed with air, is dangerous to life.

POTENTIALLY EXPLOSIVE CHEMICAL. Any chemical substance, other than one classified as an explosive, that can be exploded by heat or shock when it is unconfined and unmixed with air or other materials.

PRESSURE DELIVERY SYSTEM OR REMOTE PUMPING SYSTEM. Any method of transferring flammable or combustible liquids from underground storage tanks to fuel tanks or motor vehicles whenever the pump is located other than in the dispenser.

PROCESSING PLANT. That portion of a property in which flammable or combustible liquids or materials are mixed, heated, separated or otherwise processed as principal business, but shall not include plants defined herein as refineries.

PUBLIC CONVEYANCE. Any railroad car, street car, cab, bus, airplane or other vehicle that is carrying passengers for hire.

PUBLIC NUISANCE. Shall include the existence of dry and drying weeds, rubbish and waste material on property, lands or premises that are dangerous or injurious to that or neighboring property, lands or premises, and that are detrimental to the welfare of the occupants or residents of the vicinity.

PUBLIC PARKING DECKS. A special structure limited in use only to the temporary parking of motor vehicles.

PUBLIC SPACE. Is a legal open space on the premises, accessible to a public way or street, such as yards, courts or open spaces, permanently devoted to public use, which abuts the premises, and that is permanently maintained accessible to the Fire Department and free of all encumbrances that might interfere with its use by the Fire Department.

PUBLIC WAY. Any street, alley or other parcel of land open to the outside air, deeded, dedicated or otherwise permanently appropriated to the public for public use, and having a clear width and height of not less than 10 feet.

RADIOACTIVE MATERIAL. Any material or combination of materials that spontaneously emits ionizing radiation.

RAILWAY. Any steam, electric, or other railroad or railway that carries passengers for hire.

REFINERY. A plant in which flammable or combustible liquids are produced on a commercial scale from crude petroleum, natural gasoline or other hydrocarbon sources.

REPAIR. Replacement or renewal of any part of an existing building with equivalent materials for the purpose of its maintenance, excluding addition, change or modification in construction or occupancy.

SAFETY CAN. An approved container of not more than a 5-gallon capacity, having a spring-closing lid and spout

cover so designed that it will safely relieve internal pressure when subjected to fire exposure.

SELF-CLOSING. As applied to a fire door or other opening, normally closed and equipped with an approved device that will insure closing after having been opened for use.

SERVICE STATION. A place of retail business at which refueling is carried on by using fixed dispensing equipment connected to underground storage tanks by a closed system of piping, and at which goods and services are generally required in the operation and maintenance of motor equipment.

SHALL. Where used in this Code, "shall" is mandatory.

SMOKE DETECTOR. A smoke detector is an approved listed detector sensing either visible or invisible particles of combustion.

SPRAYING AREA. Any area in which dangerous quantities of flammable vapors or combustible residues, dusts or deposits are present due to the operation of spraying processes. The Fire Official may define the limits of the spraying area in any specific case.

SPRINKLERED. Equipped with an approved automatic sprinkler system properly maintained.

STANDBY FIRE WATCH. A trained person(s) charged with the duties of constant surveillance of affected area(s) where fire protection systems are temporarily out of service and in places of assembly where surveillance is essential to public safety.

STREET. Any public thoroughfare, street, avenue, boulevard, park, highway or space more than 20 feet in width, which has been dedicated or deeded to the public.

STREET LINE. A lot line dividing a lot from a street.

STRUCTURE. That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner. The term "structure" shall be construed as if followed by the words "or part thereof."

TANK. A vessel containing more than 60 gallons.

TANK VEHICLE. Any vehicle, other than railroad tank cars and boats, with a cargo tank mounted thereon or built as an integral part thereof used for the transportation of flammable or combustible liquids, LP gas or hazardous chemicals. Tank vehicles include self-propelled vehicles, and full trailers and semi-trailers with or without motive power and carrying part or all of the load.

TENSION MEMBRANE STRUCTURES. A non-pressurized membrane structure wherein the membrane is prestressed and the structural support system includes cables and/or rigid elements to maintain the structural form.

TENT. Any structure, enclosure or shelter constructed of canvas or pliable material supported by any manner, except by air or the contents it protects.

THERMAL INSECTICIDAL FOGGING. The use of insecticidal liquids, which are passed through thermal fog-generating units, where they are, by of heat, pressure and tur-

DEFINITIONS AND ABBREVIATIONS

bulence, transformed and discharged in the form of fog or mist that is blown into the area to be treated.

UL. Underwriters Laboratories, Inc.

U.S.B.M. United States Bureau of Mines.

VAPOR AREA. Any area containing quantities of flammable vapors. The Fire Official may determine the extent of the vapor area, taking into consideration the characteristics of the liquid, degree of sustained ventilation and nature of the operations.

VAPOR PRESSURE. The pressure, measured in psi (absolute), exerted by a volatile fluid as determined by *Standard Method of Test for Vapor Pressure of Petroleum Products*, (Reid Method) ASTM D323.

WRITING. Includes printing and typewriting.

WRITTEN NOTICE. Shall be considered to have been served if delivered in person to the individual or to the parties intended, or if delivered at or sent by registered mail to, the last business address of the party given the notice.

CHAPTER 5

BOWLING ESTABLISHMENTS

SECTION 501 GENERAL

501.1 Bowling establishments shall conform to all other applicable requirements of this Code, as well as the provisions of this Chapter.

SECTION 502 RESURFACING AND REFINISHING

502.1 Lane refinishing and resurfacing operations shall not be carried on while the establishment is open for business. The Fire Department shall be notified when lanes are to be resurfaced or refinished. Approved ventilation shall be provided. Heating, ventilating or cooling systems employing recirculation of air shall not be operated during resurfacing and refinishing operations or within 1 hour following the application of flammable finishes. All electric motors or other equipment in the area shall be shut down, and all smoking and use of open flames prohibited during the application of flammable finishes and for 1 hour thereafter.

502.2 Pin refinishing, involving the application of flammable finishes, if done within a building, shall be done only in a special room meeting the requirements of this Code.

502.3 Sanding and buffing machines shall be provided with approved equipment for collecting dust during such operations. Contents shall be removed daily and disposed of in approved containers.

502.4 All power tools shall be effectively grounded.

502.5 Storage of flammable or combustible liquids in such special rooms shall not exceed a combined aggregate of 60 gallons. When such storage exceeds 10 gallons, it shall be in a flammable liquid storage cabinet or in approved safety containers not exceeding 5 gallons individual capacity. A metal waste can with a self-closing cover shall be provided for all waste materials and rags. The contents of such can shall be removed daily. Smoking shall be prohibited at all times in pin refinishing rooms.

CHAPTER 6

CELLULOSE NITRATE MOTION PICTURE FILM

SECTION 601 SCOPE

601.1 This Chapter applies to the storage and handling of cellulose nitrate motion picture film, hereafter referred to as “nitrate film.” Film having a cellulose acetate or other approved slow-burning base, marked safety film, is exempt from these provisions.

SECTION 602 STORAGE OF FILM

602.1 The following regulations shall govern the handling and storage of combustible film, except that they do not apply to the following: Films in original packages in quantities less than 50 pounds and films stored in motion picture projection booths.

602.2 Except as otherwise specified herein, the handling and storage of combustible film shall be governed by NFPA 40.

602.3 All rooms in which combustible films are stored or handled, except motion picture projection booths and film vaults, shall be enclosed in partitions of noncombustible construction having not less than 1-hour fire resistance. Openings in such partitions shall be protected by approved fire doors. Floors and ceilings of such rooms shall provide fire resistance of not less than 1 hour and vents that open automatically in case of fire shall also be provided. Tables and racks used in connection with the handling of film shall be of metal or other noncombustible material and shall be at least 4 inches away from any radiator or heating apparatus. Fire-fighting appliances using water or water solutions, shall be provided in every room. In rooms where film is stored or handled in quantities greater than 50 pounds, cabinets shall be provided with insulated metal vents. Where cellulose nitrate is handled in the film laboratories, projection rooms and film processing rooms, two means of egress shall be provided. Doors shall be self-closing or automatic closing and shall have a 1-hour fire-resistive rating, with not more than 100 square inches of wired glass set in steel frames.

602.4 Combustible film in amounts of more than 1,000 pounds shall be kept in vaults constructed as prescribed in Section 603.

602.5 Amounts of combustible film in excess of 25 pounds shall be kept in approved metal cabinets of a capacity not exceeding 375 pounds. Cabinets having a capacity of more than 50 pounds of film shall be provided with insulated metal vents of at least 14 square inches per 100 pounds of film. Cabinets holding more than 75 pounds of film shall be provided with at least one automatic sprinkler, unless so built that each roll is in a separate compartment, or so constructed that the film will burn out without communicating fire to film in any other compartment.

602.6 Unexposed film, when stored in the original shipping cases with each roll in a separate container, shall be stored

only in a room provided with an approved automatic sprinkler system.

SECTION 603 FILM VAULTS

603.1 Vaults used for the storage of combustible film shall not exceed 750 cubic feet inside and shall not be located near chimneys or other sources of heat.

603.2 Walls, floors and roofs of film vaults and their supports shall be of not less than 4-hour fire-resistant construction built without cracks or holes that will permit escape of gases. Drains or scuppers, to the outside of the building shall be provided. All door openings shall be protected with approved fire doors on each face of the wall; the inner door shall be automatic, the outer door shall be of the self-closing swinging type.

603.3 Each vault shall have an independent vent having not less than 140 square inches effective area per 1,000 pounds of film capacity (equivalent to 70 square inches per 100 standard rolls), but the vent area for a vault of 750 cubic feet shall in no case be less than 1,400 square inches. Vents shall be of noncombustible materials and shall be located at least 50 feet from all openings exposed thereto.

603.4 Film shall be protected against ignition by rays of sun and radiated heat.

603.5 Vaults shall have no skylights or glass windows, except as specified for vents. Vents may be protected against the weather by a single thickness of glass $\frac{1}{16}$ inch thick and not less than 200 square inches in area, in a sash arranged to open automatically in case of fire, or by equivalent protection.

603.6 Vaults shall be protected by an approved system of automatic sprinklers (see Chapter 7 of the *EPCOT Building Code*) with a ratio of one head to each $62\frac{1}{2}$ cubic feet of total vault space. A vault of 750 cubic feet shall have not less than 12 sprinkler heads.

SECTION 604 ENCLOSURES FOR MOTION PICTURE PROJECTORS

604.1 Motion picture projectors operated with nitrate film shall be located in enclosures constructed, equipped and maintained in accordance with the *EPCOT Building Code*.

604.2 Each projection room shall be provided with rewind film storage facilities.

604.3 A maximum of four containers for flammable liquids not greater than a 16-ounce capacity and of a non-breakable type may be permitted in each projection room.

CHAPTER 7

CELLULOSE NITRATE PLASTICS (PYROXYLIN)

SECTION 701 DEFINITION

701.1 Cellulose Nitrate Plastics (Pyroxylin). Any plastic substance, material or compound, other than cellulose nitrate film, covered by Chapter 6, or guncotton or other explosives covered by Chapter 12 having cellulose nitrate as a base by whatever name known when in the form of blocks, slabs, sheets, tubes or fabricated shapes.

SECTION 702 DISPLAY OF PLASTICS

702.1 All displays of cellulose nitrate plastic (pyroxylin) articles in stores shall be in show cases or show windows, except as follows:

- (a) Articles may be displayed on tables and counters. No table shall be more than 3 feet wide and 10 feet long, and tables shall be spaced at least 3 feet apart. Articles displayed on counters shall be arranged in a like manner.
- (b) Storage of any kind, and accumulations of paper, refuse and other combustible material, shall not be permitted in spaces under tables.
- (c) Sales or display tables shall be so located so as not to interfere with free exit from the room in at least one direction.
- (d) No electric light shall be located directly above any cellulose nitrate plastic (pyroxylin) material, unless provided with a suitable guard to prevent heated particles from falling.

SECTION 703 STORAGE AND HANDLING

703.1 All raw cellulose nitrate plastic (pyroxylin) material in factory buildings shall be kept and handled in accordance with this Section.

703.2 Where raw material in excess of 25 pounds is received in any building or fire area, an approved vented cabinet or vented vault equipped with an approved automatic sprinkler system shall be provided for the storage of the material.

703.3 Not more than 1,000 pounds of raw material may be stored in cabinets in any one workroom, and not more than 500 pounds in any one cabinet, nor more than 250 pounds in one compartment.

703.4 All raw material in excess of that permitted in Subsection 703.3 shall be kept in vented vaults not exceeding a 1,500-cubic-foot capacity and with one automatic sprinkler head to each 125 cubic feet of total vault space, and with construction and venting in conformance to the requirements prescribed in Chapter 8 and satisfactory to the Fire Official.

703.5 No cellulose nitrate plastics (pyroxylin) shall be stored within 2 feet of any heat-producing appliances, steam pipes, radiators or chimneys.

703.6 In factories manufacturing articles of cellulose nitrate plastics (pyroxylin), such sprinklered and vented cabinets, vaults or storage rooms, approved by the Fire Official, shall be provided as required to prevent the accumulation in work rooms of raw stock, stock in process or finished articles.

703.7 In the work rooms of cellulose nitrate plastic (pyroxylin) factories, operators shall not be stationed closer together than 3 feet, and the amount of material per operator shall not exceed one-half of the day's supply and shall be limited to the capacity of three tote boxes, including material awaiting removal or use.

703.8 All waste, cellulose nitrate plastic (pyroxylin) materials, such as shaving, chips, turnings, sawdust, edgings and trimmings, shall be kept under water in metal receptacles until removed from the premises.

SECTION 704 FIRE CONTROL

704.1 All new and existing buildings, or any portion of buildings used for the manufacture or storage of articles of cellulose nitrate plastic (pyroxylin) in quantities exceeding 100 pounds, shall be equipped with an approved automatic sprinkler system.

SECTION 705 HEATING EQUIPMENT

705.1 In buildings manufacturing articles from cellulose nitrate plastics (pyroxylin), heating shall be by low-pressure steam or hot water radiators.

CHAPTER 8

COMBUSTIBLE FIBERS

SECTION 801 DEFINITIONS

801.1 Combustible Fiber Storage Bins. Metal or metal lined containers with a capacity not exceeding 100 cubic feet and equipped with a self-closing cover.

801.2 Combustible Fiber Storage Rooms. Rooms with a capacity not exceeding 500 cubic feet separated from the remainder of the building by 1-hour fire-resistant construction.

801.3 Combustible Fibers. Readily ignitable and free-burning fibers, such as cotton, sisal, henequen, ixtle, jutes, hemp, tow, cocoa fibers, oakum, rags, waste, cloth, wastepaper, kapok, hay, straw, Spanish moss, excelsior and other like materials.

801.4 Protected Combustible Fiber Storage Vault. A room with a capacity exceeding 1,000 cubic feet separated from the remainder of the building by 2-hour fire-resistant construction and provided with an approved automatic sprinkler system.

801.5 Unprotected Combustible Fiber Storage Vault. A room with a capacity not exceeding 1,000 cubic feet separated from the remainder of the building by 2-hour fire-resistant construction and provided with approved safety vents to the outside.

SECTION 802 LOOSE STORAGE

802.1 Loose combustible fibers shall be stored as follows:

CUBIC FEET MATERIALS	METHOD OF STORAGE
0 – 100	Combustible Fiber Storage Room
101 – 500	Combustible Fiber Storage Bin
501 – 1,000 Unprotected	Combustible Fiber Storage Vault
1,001 – Unprotected	Combustible Fiber Storage Vault

802.2 Twenty-five hundred cubic feet of loose fibers or less may be stored in a detached “loose house” suitably located with openings properly protected against entrance of sparks. The loose house shall be used for no other purpose.

SECTION 803 BALED STORAGE

803.1 No single block or pile shall contain more than 25,000 cubic feet of fiber exclusive of aisles or clearances. Blocks or piles of baled fiber shall be separate from adjacent storage by aisles not less than 5 feet wide, or by flash fire barriers consisting of continuous sheets of noncombustible material extending from the floor to a height of at least 1 foot above the highest point of the piles and projecting at least 1 foot beyond the sides of the piles.

803.2 Sisal and other fibers in bales bound with combustible tie ropes, also jute and other fibers subject to swelling when wetted, shall be stored to allow for expansion in any direction without endangering building walls, floors, ceilings or columns. Not less than a 3-foot clearance shall be left between walls and sides of piles, except that if the storage compartment is not more than 30 feet in width, an 18-inch clearance at sidewalls will be sufficient, provided a center aisle not less than 5 feet is maintained.

803.3 Not less than a 3-foot clearance shall be maintained between fire sprinklers and tops of piles.

SECTION 804 STORAGE OF AGRICULTURAL PRODUCTS

804.1 Hay, straw or other similar agricultural products shall not be stored adjacent to a building or other combustible material unless a clear horizontal distance equal to 20 feet is maintained between such storage and combustible material or building. A clear space of 20 feet shall be maintained between stacks of such products. No permit shall be required for such storage.

SECTION 805 DUST

805.1 Equipment or machinery within a building that generates or emits combustible fibers shall be provided with an approved dust-collecting and exhaust system.

CHAPTER 9

COMPRESSED GASES

SECTION 901 SCOPE

901.1 This Chapter applies to bulk oxygen systems, and the storage, handling and use of compressed gases as defined herein. LP gases and compressed gases used in conjunction with welding or cutting operations are exempt from these provisions.

SECTION 902 DEFINITIONS

902.1 Bulk Oxygen System. An assembly of equipment, such as oxygen storage containers, pressure regulators, safety devices vaporizers, manifolds and interconnecting piping, that has a storage capacity at normal temperature and pressure of:

- (a) More than 12,000 cubic feet of oxygen connected in service or ready for service; or
- (b) More than 25,000 cubic feet of oxygen, including unconnected reserves on hand at the site.

902.2 The bulk oxygen system terminates at the point where oxygen at service pressure first enters the supply line. The oxygen may be stored as a liquid or gas in either stationary or portable containers.

902.3 Flammable Anesthetic. A compressed gas that is flammable and administered as an anesthetic, and shall include, among others, cyclopropane, divinyl ether, ethyl chloride, ethyl ether and ethylene.

902.4 Gaseous or Liquid Hydrogen System. A facility in which the hydrogen is delivered, stored and discharged in the gaseous or liquid form to consumer piping. The system includes stationary or portable containers, pressure regulators, safety relief devices, manifolds, interconnecting piping and controls. The system terminates at the point where hydrogen at service pressure first enters the consumer's distribution piping.

902.5 Non-Flammable Medical Gas. A compressed gas that is non-flammable and used for therapeutic purposes, and shall include, among others, oxygen and nitrous oxide.

SECTION 903 STORAGE CONTAINERS

903.1 Each cylinder or pressure vessel shall be designed, constructed, tested, maintained and marked with the name of the gas contained so as to be reasonably safe to persons and property. Evidence that each cylinder or pressure vessel has been designed, constructed, tested, maintained and marked with the name of the gas contained in accordance with national standards shall be evidence that such cylinder or pressure vessel is reasonably safe to persons and property.

903.2 All compressed gas cylinders in service or in storage shall be adequately secured to prevent falling or being knocked over.

SECTION 904 CYLINDER SYSTEMS

904.1 Cylinder Systems for Flammable Anesthetics and Non-Flammable Medical Gases. Cylinders containing flammable anesthetics and non-flammable medical gases, in hospitals and similar facilities, shall be stored, handled and used so as to be reasonably safe to persons and property. Evidence that cylinders containing flammable anesthetics and non-flammable medical gases, in hospitals and similar facilities, have been stored, handled and used in accordance with national standards shall be evidence that such cylinders are reasonably safe to persons and property.

904.2 Piping systems shall not be used to distribute flammable medical gases in any hospital or similar facility.

SECTION 905 DISTRIBUTION SYSTEMS

905.1 Piped Distribution Systems for Non-Flammable Medical Gases. Piped distribution systems handling non-flammable medical gases, in hospitals and similar facilities, shall be installed and used so as to be reasonably safe to persons and property. Evidence that said piped distribution systems have been installed and used in accordance with national standards shall be evidence that such piped distribution systems are reasonably safe to person and property.

SECTION 906 BULK SYSTEMS

906.1 Bulk Oxygen Systems Installed at Industrial and Institutional Consumer Sites. Bulk oxygen systems located at industrial and institutional consumer sites shall be installed so as to be reasonably safe to persons and property. Evidence that said bulk oxygen systems that have been located in industrial and institutional consumer sites have been installed in accordance with national standards shall be evidence that such bulk oxygen systems are reasonably safe to persons and property.

SECTION 907 ANHYDROUS AMMONIA

907.1 Anhydrous ammonia shall be stored and handled so as to be reasonably safe to persons and property. Evidence that anhydrous ammonia has been stored and handled in accordance with national standards shall be evidence that such anhydrous ammonia is reasonably safe to persons and property.

COMPRESSED GASES

SECTION 908 GASEOUS SYSTEMS

908.1 Gaseous or Liquid Hydrogen Systems at Consumer Sites. Gaseous or liquid hydrogen systems shall be installed so as to be reasonably safe to persons and property. Evidence that gaseous or liquid hydrogen systems have been installed in accordance with national standards shall be evidence that such gaseous or liquid hydrogen systems are reasonably safe to persons and property.

CHAPTER 10

DRY CLEANING PLANTS

SECTION 1001 DEFINITIONS

1001.1 Dry Cleaning. The process of removing dirt, grease, paints and other stains from wearing apparel, textiles, fabrics, rugs or other material, by the use of nonaqueous liquids (solvents), and it shall include the process of dyeing clothes, or other fabrics or textiles, in a solution of dye colors and non-aqueous liquid solvents.

1001.2 Solvent Classification. A method for classifying solvents as follows:

- (a) **Class I Solvents.** Mean flammable liquids having a flash point at or below 100°F.
- (b) **Class II Solvents.** Flammable liquids have a flash point at or above 100°F and below 140°F.
- (c) **Class III Solvents.** Mean combustible liquids having a flash point at or above 140°F.

1001.3 System Classification. Dry cleaning plants or systems are classified as follows:

- (a) **Class I Systems.** Those utilizing Class I solvents.
- (b) **Class II Systems.** Those utilizing Class II solvents or systems utilizing Class II solvents that do not comply with Class III or IV systems.
- (c) **Class III Systems.** Those employing equipment listed by UL utilizing Class III solvents.
- (d) **Class IV Systems.** Those utilizing solvents that are non-flammable (will not support combustion) or non-flammable at ordinary temperature and only moderately flammable at higher temperatures.

SECTION 1002 CLASS I SYSTEMS

1002.1 New dry cleaning plants or systems utilizing Class I solvents shall be prohibited.

SECTION 1003 CLASS II SYSTEMS

1003.1 Class II systems shall be located in buildings conforming to the provisions of the *EPCOT Building Code* for a Group H occupancy.

1003.2 Dry cleaning operations shall be restricted to the lowest floor of a building, but shall not be located on any floor below grade, nor in the same buildings with other occupancies. Operations incidental to the dry cleaning business, such as laundering, pressing and ironing, may be in a communicating building or located on the same floor with the dry cleaning plant, provided the dry cleaning operations are separated therefrom by 2-hour fire-resistive construction.

1003.3 Door openings on stairs or elevators leading from a dry cleaning area to a basement, or opening into a room having

openings or stairs to basements, shall be provided with non-combustible sills or ramps raised at least 6 inches. Approved self-closing fire doors shall be provided at such openings. Enclosures shall be of construction equivalent to the floor construction, but having a rating of not less than 1-hour fire resistance.

1003.4 Rooms in which articles are hung up to dry shall be separated from the rest of the building by 2-hour fire-resistive construction. If the drying room is in a separated building, it shall conform in all respects to the provisions for that type of occupancy.

1003.5 A mechanical system of ventilation shall be installed in dry cleaning areas and drying rooms conforming to the provisions of the *EPCOT Mechanical Code*.

1003.6 The mechanical system of ventilation shall have sufficient capacity to insure complete and continuous change of air in accordance with the provisions of the *EPCOT Mechanical Code* and shall be provided with means for remote control. The system shall operate automatically when any dry cleaning equipment is in use.

SECTION 1004 CLASS III SYSTEMS

1004.1 Class III systems, if located in the same building with other occupancies, shall be separated from the remainder of the building by 1-hour fire-resistive construction.

SECTION 1005 CLASS IV SYSTEMS

1005.1 Class IV systems shall be subject to the requirements for a permit, but shall be exempt from all other provisions of this Chapter.

1005.2 Self-service dry cleaning plants utilizing only solvents approved for Class IV dry cleaning installation may be installed subject to the approval of the Fire Official.

1005.3 Spotting operations using flammable or combustible liquids shall not be permitted where self-service dry cleaning equipment is installed.

SECTION 1006 HEATING EQUIPMENT

1006.1 Where Class II systems are used, heating shall be by steam or hot water only. Where Class III systems are used, heating shall be by approved means, which does not involve any open flame or ignition source in the dry cleaning area. Steam and hot water pipes, and radiators for heating and drying purposes, shall be at least 1 inch from all woodwork and shall be protected by substantial metal screens arranged so as to prevent combustible goods or materials from coming in contact with pipes and radiators.

1006.2 For Class II or III systems, boilers shall be located in a boiler room separated from the rest of the building by walls or partitions having at least 2-hour fire resistance, and by floor or ceiling construction having not less than 2½-hour fire resistance.

SECTION 1007 ELECTRIC EQUIPMENT AND LIGHTING

1007.1 Electric wiring and equipment in dry cleaning rooms or other locations subject to flammable vapors shall be installed in accordance with the *EPCOT Electrical Code*.

SECTION 1008 STORAGE AND HANDLING

1008.1 Cleaning Solvent. Above-ground containers, comprised of purifiers, clarifiers and filters in Class II systems, shall not exceed 350 gallons individual capacity and shall not exceed in capacity any industrial tank to which they may be connected. Solvent storage tanks for Class II and III systems may be inside of buildings if the individual capacity of tanks does not exceed 275 gallons and the aggregate capacity of storage tanks does not exceed 550 gallons. Quantities of solvents for Class II and III systems in excess of the quantities listed shall be stored in accordance with Chapter 16.

1008.2 Pressure-type filters shall be equipped with a reliable pressure gauge and shall not be operated at pressures exceeding those for which they are designed. The filters shall be provided with an air bleeding valve and the line connected to discharge into the washer or into the storage tank vent line. Such air bleeding lines shall not discharge into the room.

1008.3 The handling of solvents from the storage tanks through the various machines and back to the settling and clear solvent tanks shall be through closed circuits of piping. Pumps of positive displacement type shall have a bypass and relief valve.

1008.4 Sight glasses, the breakage of which would permit the escape of liquids, shall be of a type not readily damaged by heat and shall be reliably protected against physical damage.

1008.5 Liquid-level gauge glasses in Class II systems shall be equipped with an automatic device that will immediately shut off the flow of solvent if the glass is broken. These liquid-level gauge glasses shall be guarded against physical damage.

1008.6 When underground treating and settling tanks are used, a separate suction and discharge connection shall be provided to the pump for removal of sludge. The suction pipe shall be carried to the tank bottom, and the discharge connection to a suitable container.

1008.7 All piping shall be tested to a pressure of at least 50 percent in excess of normal operating pressure, and proved tight and protected against physical damage.

1008.8 Piping, valves, fittings and ground joint unions for solvents shall be designed for the working pressures and structural stresses to which they may be subjected. They shall be of steel or other material suitable for use with the solvent. Pipe systems shall be substantially supported and protected against physical damage and excessive stresses arising from

settlement, vibration, expansion or contraction. Pipe systems shall contain a sufficient number of valves to operate the system properly and to protect the plant. Cast-iron fittings for pressure piping shall be prohibited.

SECTION 1009 WASHING MACHINES

1009.1 Washing machines shall be substantially constructed. The loading door opening shall be equipped with a close-fitting door so designed as to prevent solvent leaks due to splash. The machines shall be provided with interlocks to prevent cylinder rotation under power, except for inching when doors are open.

1009.2 Each washing machine shall be provided with an overflow pipe one size larger than the size of the solvent supply line to the machine. Such overflow pipe shall be connected to the shell of the washer so that the top of the overflow is below the bottom of the trunnion shaft; it shall be without shutoff valves and shall be arranged to discharge to a suitable tank. The supply pipe shall enter the washing machine above the charged liquid level.

1009.3 Individual button and lint traps shall be provided for each washer.

1009.4 In Class II systems, each washing machine shall be provided with approved fire-extinguishing equipment, arranged to operate automatically in case of fire, consisting of a carbon dioxide system or a steam jet not less than ¾ inch with a continuously available steam supply at a pressure of not less than 15 pounds per square inch.

SECTION 1010 STILLS AND CONDENSERS

1010.1 Steam or hot water only shall be used as the source of heat. If steam is used, a pressure-regulating valve shall be installed in the steam supply line to the still.

1010.2 Stills and condensers shall be liquid and gas tight.

1010.3 Stills shall be designed for operation on the vacuum principle.

1010.4 If a relief valve is provided, it shall be equipped with a vent line extending to the outside.

1010.5 A check valve shall be installed in the steam line between the boiler and still.

1010.6 Each still shall be provided with a combination vacuum and pressure gauge.

1010.7 Each still shall be equipped with a constant level valve to automatically maintain the solvent liquid level in the still at the proper height.

SECTION 1011 DRYING TUMBLERS AND CABINETS

1011.1 Drying tumblers in Class II systems shall be of substantial construction, well secured to substantial foundations, and shall be provided with self-closing explosion hatches having an area equal to at least 1 square foot for each 30

cubic feet of cylinder volume. Hatches shall be arranged to open away from the operator.

1011.2 Drying tumblers in Class II systems shall be provided with a steam jet of not less than a $\frac{3}{8}$ -inch size for humidifying during the drying process.

1011.3 Drying tumblers and drying cabinets shall be ventilated to the outside air by means of properly constructed pipes or ducts connected to an exhaust fan of sufficient capacity to remove all dust, vapors or lint generated by the process. Such discharge pipes or ducts shall be carried to a height of not less than 6 feet above the roof, and shall be provided with cleanout facilities, if used for Class II systems.

1011.4 Discharge pipes shall not terminate within 10 feet measured horizontally from any door, window or wood frame walls of any adjoining or adjacent building.

1011.5 The fan shall be properly housed and is interlocked as to insure operation while the drying tumbler is in use. The fan spiders, blades or running rings shall be constructed of non-ferrous metal. In no case shall the fan motor be mounted within the ventilating duct.

1011.6 Each drying tumbler in Class II systems shall be provided with approved extinguishing equipment, arranged to operate automatically in case of fire, consisting of a carbon dioxide or steam jet system.

SECTION 1012 EXTRACTORS

1012.1 The baskets shall have a rim of non-ferrous metal and shall be well balanced.

1012.2 Extractors shall be provided with liquid-tight covers, or they shall be designed so that none of the liquid solvent is thrown out of the extractor while it is in operation. The cover shall be equipped with automatic, mechanical or electrical interlocks that will prohibit operating the extractors while the cover is open and will prohibit opening the cover until the basket comes to rest.

1012.3 Extractors shall be provided with a drain pipe not less than $1\frac{1}{2}$ inches in diameter connected directly to underground storage tanks or to a suitable above-ground container, or to the washer through an approved extractor pump with connections fitted with proper valves.

1012.4 Brakes, if used, shall be so designed as to prevent the creation of sparks or excessive heat.

1012.5 Extractors shall not be operated at a speed in excess of that prescribed by the manufacturer as shown on the nameplate, which shall be provided on each machine.

1012.6 Extractors equipped with a solvent spray nozzle for spray rinsing of garments after the primary extraction shall comply as follows:

- (a) Installation of spray rinse equipment on existing extractors shall be subject to the approval of the Fire Official.
- (b) Extractor covers shall be made splashproof to prevent leakage of the solvent, and shall be equipped with a latch to hold the cover closed during operation.

- (c) Supply pumps of positive-displacement type shall be provided with a bypass and the relief valve set so to prevent excessive pressure.
- (d) Valves in supply line between pumps and outlet shall be installed in such a manner that the cutoff is affected ahead of any flexible portion of the supply lines.
- (e) Extractor drain lines shall not be less than 2 inches for extractors up to and including 40 inches in diameter and 3 inches for extractors in excess of 40 inches in diameter.
- (f) Extractors shall be provided with at least one drain line open at all times. If more than one extractor drain line is provided for the purpose of alternating use, quick-opening valves or equivalent shall be installed in each line and interlocked so that when either valve is shut the other valve is open.
- (g) If a separate extractor drain tank is provided, it shall have a capacity equal to the combined total gallonage of the charged solvent extraction, the rinse and the rinse extraction.
- (h) Drainage from extractors to all tanks shall be by gravity flow.

SECTION 1013 COMBINATION DRY CLEANING UNITS

1013.1 The provisions of this Section shall apply to combination dry cleaning units wherein the washing and extracting cycles are completed within the same enclosure.

1013.2 The machines shall be of substantial construction and shall be provided with splashproof doors or covers, with interlocking means to prevent cylinder rotation under power, except for inching at slow speed when doors or covers are open. Such interlocks shall provide that during the extracting cycle opening of the door or cover will disconnect the drive motor and apply braking means to bring the cylinder to rest before access to the cylinder is possible. Machines shall be provided with braking means to insure stoppage within a reasonable time without the creation of sparks or excessive heat.

1013.3 Each machine shall be provided with an overflow pipe one size larger than the size of the solvent supply line to the machine. Such overflow shall be connected so that the top of the overflow is below the bottom of the trunnion shaft and arranged to discharge into a suitable tank.

1013.4 Individual button and lint traps, with suitable lids, shall be provided for each machine.

1013.5 The supply pipes to machines, whether from pumps, filters or storage tanks, shall be arranged to deflect solvent stream away from tub openings.

1013.6 Cylinder shall be supported so as to provide sufficient clearance to prevent the striking or rubbing of adjacent parts during rotation.

1013.7 Machines shall be furnished with a nameplate indicating the maximum cylinder speed and a warning that machines shall not be operated in excess of such speed.

1013.8 Each machine in a Class II system shall be provided with approved extinguishing equipment arranged to operate

DRY CLEANING PLANTS

automatically in case of a fire consisting of a carbon dioxide or steam jet system.

SECTION 1014 BONDING FOR CLASS II AND III SYSTEMS

1014.1 Storage tanks, treatment tanks, purifiers, pumps, piping, washers, extractors, drying tumblers, drying cabinets, combination units and other such equipment, if not inherently electrically conductive, shall be bonded together. This system of equipment, if it is not grounded due to the electrical power services installed thereon, shall be grounded. Isolated units of equipment, such as drying cabinets, shall be grounded.

1014.2 Pulleys and belting in dry cleaning rooms shall be provided with properly grounded combs, collectors or neutralizers.

1014.3 When fabrics are transferred from one piece of equipment to another, the two pieces of equipment shall be electrically bonded together.

1014.4 Metal tops of spotting tables shall be permanently and effectively grounded.

SECTION 1015 SCOURING, BRUSHING AND SPOTTING

1015.1 The brushing (prespotting) table shall have a liquid-tight top with a curb on all sides not less than 1 inch high. The top of the table shall be pitched so as to insure thorough draining to a 1½-inch drain connected to a suitable container especially provided and marked for that purpose.

1015.2 All scouring or brushing and spotting (prespotting) operations utilizing solvents with lower flash points than the solvents used in the plant dry cleaning machines shall be limited to 1 gallon and dispensed from approved safety cans. Additional storage shall be in approved safety cans of not more than a 1-gallon capacity.

1015.3 Scouring or brushing operations utilizing in excess of 1 gallon of solvent with lower flash points than the solvent used in the plant dry cleaning machines shall be conducted only in a room or building conforming to all the requirements for a dry cleaning system utilizing the same type of solvent.

1015.4 The total amount of solvent used on scouring or brushing tables or in scrubbing tubs shall not exceed 3 gallons. The scouring or brushing table or scrubbing tub shall be so located as to ensure thorough and effective disposal of vapors through the ventilating system. Scrubbing tubs shall be used only for articles, the character of which prevents their washing in the usual washing machines. Scrubbing tubs shall be secured to the floor and shall be provided with permanent 1½-inch trapped drains to a suitable container specially provided and marked for that purpose.

SECTION 1016 FIRE CONTROL

1016.1 Adequate portable fire extinguishers of a type suitable for fighting fires involving flammable or combustible liquids, shall be provided in all dry cleaning plants. At least one extinguisher shall be provided at each entrance to every room or

area where flammable or combustible liquids are stored or used.

SECTION 1017 SMOKING

1017.1 Smoking in plants employing Class II or III systems, except in smoking rooms so designated, shall be strictly prohibited and "NO SMOKING" signs shall be posted.

CHAPTER 11

MAINTENANCE OF EXIT WAYS

SECTION 1101 SCOPE

1101.1 In every building, means of egress shall be maintained in accordance with this Chapter.

SECTION 1102 GENERAL

1102.1 Means of egress shall consist of continuous and unobstructed paths of travel to the exterior of a building at all times. Egress is not permitted through any service corridor or kitchen.

1102.2 Where unusually hazardous conditions exist, additional means-of-egress facilities shall be provided as required by the Fire Official, when necessary to assure the safety of the occupants. Additional means of egress shall utilize existing structural facilities and shall not require alterations for or construction of additional means of egress.

1102.3 No building shall hereafter be altered so as to reduce the capacity of the means of egress to less than required by the *EPCOT Building Code*, nor shall any change of occupancy be made in any building unless such building conforms to the requirements of the *EPCOT Building Code*.

1102.4 Stairways, ramps and passageways used for required exits shall be of noncombustible construction, except when otherwise specifically permitted by the *EPCOT Building Code*.

SECTION 1103 EXIT OBSTRUCTION

1103.1 In every building or structure, means of egress shall be so maintained as to provide free and unobstructed egress from all parts of the building or structure at all times, and so as to be available for full instant use in case of fire or other emergency.

1103.2 Exit enclosures shall be maintained free of building facilities that could interfere with use as an exit, such as piping for flammable liquids or gases.

1103.3 Interior decoration, such as draperies, tapestries, mirrors or theme backdrops, shall not be permitted to obscure, conceal or confuse exit doors, exit signs or exit pathways.

1103.4 Exit access and exit discharge areas shall be so maintained as to provide a permanent, reasonably straight path of travel unimpeded by railings, barriers or gates dividing such areas into sections ancillary to adjoining individual rooms or spaces. Where the Fire Official finds this required path to be obstructed by movable objects, he may require the fastening of such objects in out-of-the-way locations, or the erection of railings or other barriers to prevent such encroachment.

1103.5 Fire Escapes. No person shall at any time place an encumbrance of any kind before or upon any fire escape, balcony or ladder intended as a means of escape from fire.

1103.6 Storage of Materials. No person shall place, store or keep, or permit to be placed, stored or kept, any materials the presence or burning of which would obstruct a means of egress or would render the same hazardous.

1103.7 During Construction. Required means of egress shall be maintained or alternative facilities provided during the construction of additions, remodeling or alterations in accordance with this Subsection.

1103.8 Aisles. In every portion of a building or area where seats, tables, merchandise, equipment or similar impediments to egress are present, required aisles shall be maintained free of all obstructions. Aisles, corridors or passageways leading directly to every exit shall be created and maintained in open floor areas where exits are not immediately accessible. Except where single exits or limited dead ends as permitted by the *EPCOT Building Code*, such aisles shall be so arranged as to provide access to at least two exits by separate paths of travel.

SECTION 1104 DOORS

1104.1 Doors provided for egress purposes shall be maintained as provided in this Chapter.

1104.2 Required exit doors shall be openable from the inside without the use of a key, tool, special knowledge or effort, except as provided for by the *EPCOT Building Code*.

1104.3 Locks, where provided, shall be of a type that may be readily distinguishable as locked. Those placed on exterior exit doors in Group B or I occupancies as defined in the *EPCOT Building Code* may be exempted from the requirements of this Subsection providing that a readily visible sign is attached on or adjacent to each door reading: "THIS EXIT TO REMAIN UNLOCKED DURING BUSINESS HOURS." Such signs shall be in letters no less than 1 inch high on a contrasting background. The use of this exemption may be revoked for due cause, such as repeated findings of locked exits when the premises are in use.

1104.4 The clear heights of exit doorways shall be not less than 6 feet, 8 inches.

1104.5 Exit doors shall be readily distinguishable from adjacent construction.

1104.6 Nothing shall block, obstruct or otherwise impair the operation of any door required to be self-closing or automatic.

1104.7 All egress doors shall swing in the direction of exit travel when serving an occupant load of 50 or more or when serving hazardous areas.

MAINTENANCE OF EXIT WAYS

1104.8 Every room or tenant space that is occupied by more than 50 people, or in which the travel distance from the most remote point to the entrance to the exit access is 50 feet, shall have not less than two egress doors located as remote from each other as practical and both shall swing in the direction of exit travel. In rooms or tenant spaces not meeting these requirements, only one access door is required and it may swing into the room or tenant space.

1104.9 No exit doorway shall open immediately upon a flight of stairs. A landing of at least the width of the door shall be provided.

SECTION 1105 BALCONIES

1105.1 Corridor and Exterior Exit Balconies. For the purposes of this Section, the term “corridor” shall include “exterior exit balcony” and any covered or enclosed exit passageways, including walkways, tunnels and malls. Foyers, lobbies and reception rooms may be classified as corridors. Partitions, rails, counters and similar space dividers not more than 5 feet in height above the floor shall not be construed to form corridors.

1105.2 The required width of every corridor shall be maintained.

1105.3 Trim and handrails shall not reduce the required width by more than 7 inches.

1105.4 When two or more exits are provided, they shall be so maintained that it is possible to go in either direction from any point in the corridor to a separate exit, except for each dead ends as permitted by the *EPCOT Building Code*.

1105.5 Where corridors are required to be fire resistive, all walls, ceilings and openings shall be maintained as such.

SECTION 1106 STAIRWAYS

1106.1 Stairways shall be constructed in accordance with the *EPCOT Building Code*.

1106.2 Stairs serving as required means of egress shall be clear of all obstructions, except that handrails attached to walls may project not more than 3½ inches at each side within the required width.

1106.3 Width of stairs shall not decrease in the direction of exit travel.

1106.4 Stairways serving an occupant load of more than 50 shall be not less than 44 inches wide. Stairways serving an occupant load of 50 or less may be 36 inches wide. Private stairways serving an occupant load of less than 10 may be 30 inches wide.

1106.5 The length and width of landings shall be at least equal to the width of the stairway that it serves. The dimension measured in the direction of travel need not be more than 4 feet when the stairway has a straight run. Landings shall not be reduced in width by more than 3½ inches by a door when fully opened.

1106.6 Except in one- and two-family dwellings, the underside of interior stairways, if of combustible construction, shall be protected to provide not less than 1-hour fire resistance.

1106.7 Stairs serving as required means of egress shall have a minimum headroom clearance of 6 feet, 6 inches, measured vertically from nearest nosing to the nearest soffit. This minimum shall be maintained for the full required width of stairs and landings.

SECTION 1107 RAMPS

1107.1 The width and enclosure of exit ramps shall be as required in accordance with the *EPCOT Building Code*.

SECTION 1108 HORIZONTAL EXIT

1108.1 When conforming to the provisions of the *EPCOT Building Code*, a horizontal exit may be considered a required exit.

1108.2 A horizontal exit is a horizontal passageway through a fire wall or through a 2-hour fire-resistive partition into another building or into another section of the same building, provided, however, that horizontal exits may comprise not more than 50 percent of the required exits from any building or floor area, except for exits in mechanical or equipment rooms.

1108.3 The width of horizontal exits shall not be less than required for exit doorways. The exit capacity of horizontal exits shall be as specified in the *EPCOT Building Code*.

1108.4 Horizontal exits shall be equipped with at least one approved fire door of a self-closing type. No automatic sliding fire door shall be used on horizontal exits. Door openings shall be protected as specified in the *EPCOT Building Code*.

SECTION 1109 EXIT AND STAIRWAY ENCLOSURES

1109.1 Every interior stairway enclosure shall be maintained in compliance with the requirements of the *EPCOT Building Code*.

1109.2 All stairways and other openings between floors in Group D and E occupancies shall be enclosed in fire-resistive construction. Exit stairways shall be enclosed with the following exceptions:

- (a) Stairways serving and contained within a single residential dwelling unit.
- (b) Stairways in a one- and two-family dwelling.
- (c) Supplemental stairway in all uses except Group D occupancies, which is not a required means of egress serving one adjacent floor and not connected with a corridor or stairway serving other floors.

1109.3 In all buildings less than four stories in height, all required interior exit stairways shall be enclosed in 1-hour fire-resistive construction. In all buildings of four or more

stories in height, the required interior exit stairs shall be enclosed in 2-hour fire-resistive construction.

1109.4 In stair enclosure wells or partitions protecting the stair from the interior of the building, no openings, except required exit doorways, shall be permitted. Fire windows of the fixed or automatic-closing type may be installed in stair enclosures provided they open to the exterior of the building and are located at least 10 feet from any other wall opening. Doorways to the interior of the building shall be equipped with approved fire assemblies having a 1-hour (B) classification where 1-hour walls are involved, and 1½-hour (B) assemblies where 2-hour construction is provided. Such doors are to be self-closing and are to be so maintained, or shall be automatic closing by actuation of an approved smoke detector.

SECTION 1110 EXIT SIGNS

1110.1 All required exits shall be equipped with approved exit signs in all occupancies with an occupant content of more than 50, except in Group D and E occupancies in which exit signs are required with an occupant load of more than 10.

1110.2 All exit and direction signs shall have letters at least 6 inches high with a minimum stroke of ¾ inch. Illumination equal to 5 footcandles at the surface of the sign shall be provided from a separate electric circuit or service. A battery-operated electric light or any type of portable lantern shall not be used for required exits. Luminescent, fluorescent, reflective materials or approved strip lighting may be used as a substitute for any required illumination when approved by the Building Official. Where a main entrance serves as an exit and is visible to the occupants, an exit sign is not required over the main entrance door.

1110.3 Where exit lights or signs, or the exits themselves, are not visible from the exit approach, directional signs indicating the way of egress shall be provided.

1110.4 Exit signs shall meet the requirements specified in the *EPCOT Building Code*.

SECTION 1111 ILLUMINATION OF EXITS

1111.1 Exits shall be illuminated at all times when the building is occupied with light of not less than 1 footcandle intensity at the floor level.

1111.2 Illumination of exits shall meet the requirements specified in the *EPCOT Building Code*.

CHAPTER 12

EXPLOSIVES, BLASTING AGENTS AND AMMUNITION

SECTION 1201 SCOPE

1201.1 This Chapter shall apply to the manufacture, possession, storage, sale, transportation and use of explosives, blasting agents and ammunition.

1201.2 Nothing in this Chapter shall be construed as applying to:

- (a) The Armed Forces of the United States or the State Militia.
- (b) Explosives in forms prescribed by the official United States Pharmacopoeia.
- (c) The sale, possession or use of fireworks.
- (d) The possession, transportation and use of small arms ammunition or special industrial explosive devices.
- (e) The possession, storage, transportation and use of not more than 20 pounds of smokeless powder and 2,000 small arms primers for hand loading of small arms ammunition for personal use.
- (f) The transportation and use of explosives or blasting agents by the U.S.B.M., the Federal Bureau of Investigation, the United States Secret Service, or police and fire departments acting in their official capacities.

SECTION 1202 DEFINITIONS

1202.1 Blasting Agent. Any material or mixture consisting of a fuel and oxidizer, intended for blasting, not otherwise classified as an explosive, in which none of the ingredients are classified as explosives, provided that the finished product, as mixed and packaged for the use of nitrocarbonitrates by the Department of Transportation (DOT) regulations, shall be included in this definition.

1202.2 Carrier. Persons who engage in the transportation of articles or materials by rail, highway, water or air.

1202.3 Explosive-Actuated Power Device. Any tool or special mechanized device that is actuated by explosives, but not to include propellant-actuated power devices. Examples of explosive-actuated power devices are jet tappers and jet perforators.

1202.4 Explosive Material. Any quantity of Class A, B or C explosives and any other chemical compounds or mixtures thereof used as the propelling or exploding material in any cartridge or other explosive device.

1202.5 Explosives. For the purpose of this Chapter, the term “explosives” shall mean any substance or combination of substances that is commonly used for the purpose of detonation and, upon exposure to any external force or condition, is

capable of a relatively instantaneous release of gas and heat. The term “explosives” shall include all materials classified as Class A, B or C explosives by DOT regulations, and includes, but is not limited to, dynamite, black powder, pellet powders, initiating explosives, blasting caps, electric blasting caps, safety fuse, fuse igniters, fuse lighters, squibs and cordeau detonant fuse, instantaneous fuse, igniter cord and igniters, small arms ammunition, small arms ammunition primers, smokeless propellant, cartridges for propellant-actuated powder devices, and cartridges for industrial guns, pyrotechnics, water gels and any material designated as an explosive by the State Fire Marshal.

1202.6 Highway. Any public street, alley or road.

1202.7 Magazine. Any building or structure approved for the storage of explosives.

1202.8 Propellant-Actuated Power Device. Any tool or special mechanized device or gas generator system that is actuated by a smokeless propellant or that releases and directs work through a smokeless propellant charge.

1202.9 Small Arms Ammunition. Any shotgun, rifle, pistol or revolver, cartridge and cartridges for propellant-actuated power devices and industrial guns.

1202.10 Small Arms Ammunition Primer. A small percussion-sensitive explosive charge, encased in a cap, used to ignite propellant powder.

1202.11 Smokeless Propellant. Solid propellants, commonly called smokeless powders in the trade, used in small arms ammunition, cannons, rockets or propellant-actuated power devices.

1202.12 Special Industrial Explosive Device. Any explosive-actuated power devices and propellant-actuated power devices.

1202.13 Special Industrial Explosive Material. Shaped materials and sheet forms, and various other extrusions, pellets and packages of high explosives, containing dynamite, trinitrotoluol, pentaerythritoltetranitrate, cyclotrimethylenetrinitramine or other similar compounds used for high-energy-rate forming, expanding and shaping in metal fabrication, and for dismemberment and quick reduction of scrap metal.

1202.14 Terminal. Those facilities used by carriers for the receipt, transfer, temporary storage or delivery of articles or materials.

1202.15 Test Blasting Cap No. 8. One containing 2 grams of a mixture of 80 percent mercury fulminate and 20 percent potassium chlorate, or a cap of equivalent strength.

SECTION 1203 BOND REQUIREMENT

1203.1 Before a permit is issued, the applicant shall file with the jurisdiction a surety bond in an amount specified by the jurisdiction, or a public liability insurance policy for the same amount, for the purpose of the payment of all damages to persons or property that arise from, or are caused by, the conduct of any act authorized by the permit upon which any legal judgment results. Public agencies shall be exempt from this bond requirement.

SECTION 1204 GENERAL REQUIREMENTS

1204.1 The manufacture of explosives shall be prohibited unless such manufacture is authorized by the Fire Official.

1204.2 The storage of explosives and blasting agents is prohibited within the limits established by law as the limits of the District in which such storage is to be prohibited, except for temporary storage for use in connection with approved blasting operations; provided, however, this prohibition shall not apply to wholesale and retail stocks of small arms ammunition, explosive bolts, explosive rivets or cartridges for explosive-actuated power tools in quantities involving less than 500 pounds of explosive material.

1204.3 The Fire Official may limit the quantity of explosives or blasting agents to be permitted at any location.

1204.4 No person shall possess, offer for sale, sell or display explosives or blasting agents at any location not authorized by permit issued by the Fire Official.

SECTION 1205 STORAGE OF EXPLOSIVES

1205.1 Explosives, including special industrial, high explosive materials, shall be stored in magazines that meet the requirements of this Chapter.

1205.2 Magazines shall be in the custody of a competent person at all times who shall be at least 21 years of age and who shall be held responsible for compliance with all safety precautions.

1205.3 Smoking, matches, open flames, spark-producing devices and firearms shall be prohibited inside or within 50 feet of the magazines. Combustible materials shall not be stored within 50 feet of magazines.

1205.4 The land surrounding magazines shall be kept clear of brush, dried grass, leaves, trash and debris for a distance of at least 50 feet.

1205.5 Magazines shall be kept locked, except when being inspected, or when explosives are being placed therein or being removed therefrom.

1205.6 Magazines shall be kept clean, dry and free of grit, paper, empty packages and rubbish.

1205.7 Magazines shall not be provided with other than approved artificial heat or light. Approved electric safety flashlights or safety lanterns may be used.

1205.8 Blasting caps, electric blasting caps, detonating primers and primed cartridges shall not be stored in the same magazine with other explosives.

1205.9 Magazines shall be of two types, namely: Class I and II.

1205.10 Class I magazines shall be used for the storage of explosives when quantities are in excess of 50 pounds of explosive material.

1205.11 Class I or II magazines shall be used for the storage of explosives in quantities of 50 pounds or less of explosive material, except that a Class II magazine may be used for temporary storage of a large quantity of explosives at the site of blasting operation where such amount constitutes not more than one day's supply for use in current operations.

1205.12 Class I and II magazines shall be located away from inhabited buildings, passenger railways, public highways and other magazines, in accordance with Table 12A, except as provided in Subsection 1205.13.

1205.13 At the site of blasting operations, a distance of at least 100 feet shall be maintained between Class I magazines and the blast area.

1205.14 Class II magazines shall be kept at least 150 feet from the blast area when the quantity of explosives temporarily kept therein is in excess of 25 pounds and at least 50 feet when the quantity of explosives is 25 pounds or less.

1205.15 Packages of explosives shall not be unpacked or repacked in a magazine, nor within 50 feet of a magazine or in close proximity to other explosives. Opened packages of explosives shall be securely closed before returned to a magazine.

1205.16 Magazines shall not be used for the storage of any metal tools, nor any commodity, except explosives, blasting agents and oxidizers used in compounding blasting agents. The quantity of blasting agents and oxidizers shall be included when computing the total quantity of explosives for determining distance requirements.

1205.17 When an explosive has deteriorated to an extent that it is in an unstable or dangerous condition, or if nitroglycerin leaks from any explosive, then the person in possession of such explosive shall immediately report the fact to the Fire Official, and upon authorization shall proceed to destroy such explosives and clean floors stained with nitroglycerin in accordance with the instructions of the manufacturer. Only experienced persons shall do the work of destroying explosives.

SECTION 1206 GUNPOWDER

1206.1 The Fire Official may authorize the storage of gunpowder providing such storage is in accordance with NFPA 495.

**TABLE 12A
AMERICAN TABLE OF DISTANCE FOR STORAGE OF EXPLOSIVES**

EXPLOSIVES		DISTANCES IN FEET WHEN STORAGE IS BARRICADED			
Pounds Over	Pounds Not Over	From Inhabited Buildings	From Passenger Railways	From Public Highways	Separation of Magazines
2	5	70	30	30	6
5	10	90	35	35	8
10	20	110	45	45	10
20	30	125	50	50	11
30	40	140	55	55	12
40	50	150	60	60	14
50	75	170	70	70	15
75	100	190	75	75	16
100	125	200	80	80	18
125	150	215	85	85	19
150	200	235	95	95	21
200	250	255	105	105	23
250	300	270	110	110	24
300	400	295	120	120	27
400	500	320	130	130	29
500	600	340	135	135	31
600	700	355	145	145	32
700	800	375	150	150	33
800	900	390	155	155	35
900	1,000	400	160	160	36
1,000	1,200	425	170	165	39
1,200	1,400	450	180	170	41
1,400	1,600	470	190	175	43
1,600	1,800	490	195	180	44
1,800	2,000	505	205	185	45
2,000	2,500	545	220	190	49
2,500	3,000	580	235	195	52
3,000	4,000	635	255	210	58
4,000	5,000	685	275	225	61
5,000	6,000	730	295	235	65
6,000	7,000	770	310	245	68
7,000	8,000	800	320	250	72
8,000	9,000	835	335	255	75
9,000	10,000	865	345	260	78
10,000	12,000	875	370	270	82
12,000	14,000	885	390	275	87
14,000	16,000	900	405	280	90
16,000	18,000	940	420	285	94
18,000	20,000	975	435	290	98
20,000	25,000	1,055	470	315	105
25,000	30,000	1,130	500	340	112
30,000	35,000	1,205	525	360	119
35,000	40,000	1,275	550	380	124

(continued)

TABLE 12A—continued
AMERICAN TABLE OF DISTANCE FOR STORAGE OF EXPLOSIVES

EXPLOSIVES		DISTANCES IN FEET WHEN STORAGE IS BARRICADED			
Pounds Over	Pounds Not Over	From Inhabited Buildings	From Passenger Railways	From Public Highways	Separation of Magazines
40,000	45,000	1,340	570	400	129
45,000	50,000	1,400	590	420	135
50,000	55,000	1,460	610	440	140
55,000	60,000	1,515	630	455	145
60,000	65,000	1,565	645	470	150
65,000	70,000	1,610	660	485	155
70,000	75,000	1,655	675	500	160
75,000	80,000	1,695	690	510	165
80,000	85,000	1,730	705	520	170
85,000	90,000	1,760	720	530	175
90,000	95,000	1,790	730	540	180
95,000	100,000	1,815	745	545	185
100,000	110,000	1,835	770	550	195
110,000	120,000	1,855	790	555	205
120,000	130,000	1,875	810	560	215
130,000	140,000	1,890	835	565	225
140,000	150,000	1,900	850	570	235
150,000	160,000	1,935	870	580	245
160,000	170,000	1,965	890	590	255
170,000	180,000	1,990	905	600	265
180,000	190,000	2,010	920	605	275
190,000	200,000	2,030	935	610	285
200,000	210,000	2,055	955	620	295
210,000	230,000	2,100	980	635	315
230,000	250,000	2,155	1,010	650	335
250,000	275,000	2,215	1,040	670	360
275,000	300,000	2,275	1,075	690	385

Notes:

1. All types of blasting caps in strengths through No. 8 shall be rated at 1½ pounds of explosive per 1,000 caps.
2. "Barricaded" means that a building containing explosives is effectually screened from a magazine, building, railway or highway, either by a natural barricade, or by an artificial barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine or building, or to a point 12 feet above the center of a railway or highway, will pass through such intervening natural or artificial barricade.
3. "Artificial Barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 feet.
4. "Natural Barricade" means natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures, which require protection, cannot be seen from the magazine when the trees are bare of leaves.
5. When a building containing explosives is not barricaded, the distances shown in the Table shall be doubled.
6. When two or more storage magazines are located on the same property, each magazine shall comply with minimum distances specified from inhabited buildings, railways and highways, and, in addition, they shall be separated from each other by not less than the distances shown for "Separation of Magazines," except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives. If any two or more magazines are separated from each other by less than the specified "Separation of Magazines" distances, then such two or more magazines as a group, shall be considered as one magazine, and the total quantity of explosives stored in such group must be treated as if stored in a single magazine located on the site of any magazine of the group, and shall comply with the distances specified from other magazines, inhabited buildings, railways and highways.
7. This Table applies only to the manufacture and permanent storage of commercial explosives. It is not applicable to transportation of explosives, or any handling of temporary storage necessary thereto. It is not intended to apply to bombs, projectiles or other heavily encased explosives.

SECTION 1207 CLASS I MAGAZINES

1207.1 A magazine may be a building or excavation, tunnel or igloo, or military-type magazine or a portable magazine constructed as required in this Section.

1207.2 Class I magazines shall be bullet resistant, fire resistant, weatherproof, theft resistant and well ventilated. Magazines used for the storage of blasting agents, and Class B and C explosives need not be bullet resistant.

1207.3 Building-type magazines shall be constructed of masonry, wood, metal or a combination of these materials when bullet resistance is required.

- (a) Masonry units not less than 8 inches in thickness with all hollow spaces filled with concrete, well tamped sand or equivalent material.
- (b) Reinforced concrete not less than 6 inches in thickness.
- (c) Steel walls of minimum manufacturer's standard gauge No. 14 0.0747 inch may be used, provided there are two layers spaced at least 6 inches apart with all hollow spaces filled with concrete, well tamped sand or equivalent material.
- (d) One layer of manufacturer's standard gauge No. 6 0.1943 inch or heavier steel, spaced a minimum of $\frac{1}{2}$ inch apart and lined on the interior with a minimum of 4 inches of wood.
- (e) Two layers of manufacturer's standard gauge No. 6 0.1943 inch or heavier steel, spaced a minimum of $\frac{1}{2}$ inch apart and lined in the interior with a minimum of 2 inches of wood.
- (f) Two layers of wood, at least 2 inches nominal thickness each, spaced a minimum of 4 inches apart with the hollow space filled with concrete, well tamped sand or equivalent material.
- (g) Portable magazines containing explosives constructed prior to the effective date of these orders, which do not meet these minimum requirements, may be continued in use provided sides and ends are protected by a layer of sandbags to the height of the eaves, or by other equally effective means. The roof shall also be protected when the magazine is located where it is possible to fire a bullet directly through it into the explosives stored inside.

1207.4 The magazine door shall be of bullet-resistant construction and shall be equipped with substantial and adequate means of locking. Locking devices shall be provided with protectors to minimize the possibility of tampering.

1207.5 Floors of the magazine shall be securely fastened in place and shall be capable of withstanding the loads imposed.

1207.6 The roofs and exterior sides of building-type magazines shall be of bullet-resistant construction.

1207.7 Magazines shall be ventilated to minimize dampness and heating of stored explosives.

1207.8 Magazine interiors shall have a smooth finish.

1207.9 The approaches to magazines and the door of such magazine shall be provided with warning signs reading: "EXPLOSIVES—KEEP OFF" in red letters not less than 4

inches in height and a stroke of at least $\frac{5}{8}$ inch. The lettering shall be imposed upon a white background. Location of signs shall be so placed that a bullet through the sign will not strike the magazine.

SECTION 1208 CLASS II MAGAZINES

1208.1 Class II magazines shall be constructed as follows:

- (a) Two-inch nominal thickness lumber covered on the exterior with a minimum of No. 20 manufacturer's standard gauge steel;
- (b) Two thicknesses of 1-inch plywood covered on the exterior with minimum No. 20 manufacturer's standard gauge steel;
- (c) Fiber equal in strength to wood, as indicated in Paragraphs (a) and (b), covered on the exterior with a minimum of No. 20 manufacturer's standard gauge steel;
- (d) Minimum No. 14 manufacturer's standard gauge steel, lined on the interior with one layer of 1-inch-thick plywood; or
- (e) Material of equal strength and fire resistance.

1208.2 Class II magazines containing explosives and located in buildings shall be located for easy removal in case of fire.

1208.3 Class II magazines shall be painted red and, when size permits, shall bear lettering in white on sides and top, at least 3 inches high with a $\frac{1}{2}$ -inch stroke that reads: "EXPLOSIVES."

1208.4 Class II magazines containing explosives, left at locations where no one is in attendance, shall be locked and securely fastened to prevent theft or removal.

SECTION 1209 USE AND HANDLING OF EXPLOSIVES

1209.1 Blasting operations shall be conducted during daylight hours, except when otherwise authorized.

1209.2 The handling and firing of explosives shall be performed by the person possessing a valid certificate issued by the State of Florida.

1209.3 No person shall smoke, carry matches or any other flame-producing device, or carry any firearms or loaded cartridges, while in or near a vehicle transporting explosives; or drive, load or unload any such vehicle in a careless or reckless manner.

1209.4 No open-flame light shall be used in the vicinity of explosives.

1209.5 Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph or steam utilities, the blaster shall notify the appropriate representative of such utilities at least 24 hours in advance of blasting, specifying the location and intended time of such blasting. In an emergency, this time limit may be waived by the Fire Official.

1209.6 Blasting operations shall be conducted so as to be reasonably safe to persons and property and in accordance with nationally recognized practice.

1209.7 Before a blast is fired, the person in charge shall make certain that all surplus explosives are in a safe place, all persons and vehicles are at a safe distance or under sufficient cover, and a loud warning signal has been sounded.

1209.8 Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radio or radar transmitters, lightning, adjacent power lines, dust storms or other sources of extraneous electricity. These precautions shall include:

- (a) The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.
- (b) The posting of signs warning against the use of mobile radio transmitters on all roads within 350 feet of the blasting operations.
- (c) Compliance with national safety standards when blasting within 1½ miles of broadcast or high-power, short-wave radio transmitters.

1209.9 When blasting is done in congested areas or in close proximity to a building, structure, railway, highway or any other installation that may be damaged, the blast shall be covered before firing with a mat constructed so that it is capable of preventing rock from being thrown into the air.

1209.10 Tools used for opening packages of explosives shall be constructed of non-sparking materials.

1209.11 Empty boxes, and paper and fiber packing materials, which have previously contained high explosives, shall not be used again for any purpose, but shall be destroyed by burning at any approved isolated location out of doors, and no person shall be nearer than 100 feet after the burning has started.

1209.12 Explosives shall not be abandoned.

SECTION 1210 TRANSPORTATION OF EXPLOSIVES

1210.1 Vehicles. Explosives shall not be carried or transported in or upon a public conveyance.

1210.2 Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty and shall be in good mechanical condition. If vehicles do not have a closed body, the explosives shall be covered with a flameproof and moistureproof tarpaulin, or other effective protection against moisture and sparks. Such vehicles shall have tight floors, and exposed spark-producing metal on the inside of the body shall be covered with wood or other non-sparking material to prevent contact with packages of explosives. Packages of explosives shall not be loaded above the sides of open body vehicles.

1210.3 Vehicles used to transport explosives shall be approved by the Fire Official.

1210.4 Any vehicle used for transporting explosives shall be equipped with not less than one approved-type fire extinguisher with a minimum rating of 2A, 12B or C; or two

approved-type fire extinguishers, one of which shall have a minimum rating of 2A and the other a minimum rating of 12B or C. Extinguishers shall be so located as to be readily available for use.

1210.5 It shall be the duty of the person to whom a permit has been issued to transport explosives over the highways to determine that the vehicle's:

- (a) Fire extinguishers are filled and in operating condition.
- (b) Electric wires are insulated and securely fastened.
- (c) Motor, chassis and body are reasonably clean and free of excessive grease and oil.
- (d) Fuel tank and fuel line are securely fastened and are not leaking.
- (e) Brakes, lights, horn, windshield wipers and steering mechanism are functioning properly.
- (f) Tires are properly inflated and free of defects, and that the vehicle is in proper condition for transporting explosives.

1210.6 Spark-producing metals or spark-producing metal tools shall not be carried in the body of a vehicle transporting explosives.

1210.7 Only those dangerous articles authorized by the DOT to be loaded with explosives shall be carried in the body of a vehicle transporting explosives.

1210.8 Vehicles transporting explosives shall be in the custody of drivers who are physically fit, careful, capable, reliable, able to read and write the English language, not addicted to the use or under the influence of intoxicants or narcotics, and not less than 21 years of age. They shall be familiar with state and municipal traffic regulations and the provisions of this Chapter governing the transportation of explosives.

1210.9 Vehicles transporting explosives shall display explosives signs on both sides, front and rear conforming to the requirements of the DOT.

1210.10 Blasting caps and electric blasting caps, when transported on the same vehicle with other explosives, shall be separated from the other explosives by containment within a Class II magazine.

1210.11 Vehicles transporting explosives shall be routed to avoid congested traffic and densely populated areas.

1210.12 Explosives shall not be transported through any completed vehicular tunnel or subway.

1210.13 Vehicles transporting explosives shall not be left unattended at any time within the jurisdiction.

1210.14 Unless authorized by the Fire Official, no person other than the driver and one assistant shall ride on any vehicle transporting explosives.

1210.15 The fire and police departments shall be promptly notified when a vehicle transporting explosives is involved in an accident, breaks down or catches fire. Only in the event of such an emergency shall the transfer of explosives from one vehicle to another be allowed on highways within the jurisdiction and only when qualified supervision is provided. Except in such an emergency, a vehicle transporting explosives shall

not be parked before reaching its destination, except at stopping and parking places designated and approved by the Fire Official.

1210.16 Delivery shall only be made to authorized persons, and into approved magazines or approved temporary storage or handling areas.

1210.17 Vehicles containing explosives shall not be taken into a garage or repair shop for repairs or storage.

SECTION 1211 TERMINALS

1211.1 Explosives and Blasting Agents at Terminals. The Fire Official may designate the location and specify the maximum quantity of explosives or blasting agents that may be loaded, unloaded, reloaded or temporarily retained at each terminal where such operations are permitted.

1211.2 Shipments of explosives or blasting agents delivered to carriers shall comply with the DOT.

1211.3 Carriers shall immediately notify the Fire Official when explosives or blasting agents are received at terminals.

1211.4 Carriers shall immediately notify consignees of the arrival of explosives or blasting agents at terminals.

1211.5 Truck terminals where explosives are loaded, unloaded or transferred shall conform to the following conditions:

- (a) There shall be no above-ground storage tanks of flammable or combustible liquids, or other hazardous substances, on the terminal proper or on immediate adjoining property, which would present a significant exposure hazard.
- (b) There shall be no structures or occupancies on immediately adjoining property, which would constitute a serious exposure hazard to the terminal.
- (c) The terminal property shall be sufficiently large that dock or vehicle storage areas containing explosives shall be a minimum of 50 feet from any structure on adjoining property.
- (d) Adequate access to adjoining streets shall be provided to and from the terminal property.
- (e) Explosives shall be kept in vehicles to the greatest extent possible. During transferring or loading operations, the explosives should remain on the ground or on docks for as short a time as possible.
- (f) Specific areas of docks shall be designated for the temporary "storage" of explosives during loading or transferring operations. A minimum distance shall be specified and maintained between this designated area and all other materials on the dock. Combustible storage and particularly flammable or combustible liquids shall be kept at the greatest possible distance from this designated area.
- (g) A watchman or guard shall be on duty at all times on the terminal property.

- (h) Adequate security against unauthorized persons entering the terminal property shall be provided.
- (i) The terminal shall be adequately lighted for normal observation of all vehicles containing explosives.
- (j) Adequate fire protection appliances shall be provided for the loading dock near the designated explosives area and near parked vehicles.
- (k) A specific area of the terminal property shall be designated for vehicles containing explosives.
- (l) Vehicles containing any special inherent hazard, such as mechanical refrigeration equipment, shall be kept separated from the area designated for the parking of explosives vehicles.
- (m) Shipments of explosives shall be transported without unnecessary delay.

SECTION 1212 BLASTING AGENTS

1212.1 General. Blasting agents, except when subject to DOT regulations, shall be stored, handled and used in the same manner as explosives.

1212.2 Any ammonium nitrate stored at a closer distance to the blasting agent storage area than as provided in Subsection 1211.5(c) shall be added to the quantity of blasting agents to calculate the total quantity involved for the application of Table 12A.

1212.3 Minimum separation distances between mixing units and the ammonium nitrate storage areas and blasting agent storage areas shall be in compliance with Table 12B.

SECTION 1213 MIXING

1213.1 Buildings or other facilities used for mixing blasting agents shall be located away from inhabited buildings, passenger railways and public highways in accordance with the provisions of Table 12A.

1213.2 Not more than one day's production of blasting agents or the limit determined by Table 12A, whichever is less, shall be permitted in or near the building or other facility used for mixing blasting agents. Larger quantities shall be stored in magazines.

1213.3 Buildings or other facilities used for the mixing of blasting agents shall be designed and constructed in accordance with the *EPCOT Building Code*.

1213.4 Compounding and mixing of recognized formulations of blasting agents shall be conducted in accordance with nationally recognized good practice.

1213.5 Smoking or open flames shall not be permitted in or within 50 feet of any building or facility used for the mixing of blasting agents.

1213.6 Empty oxidizer bags shall be disposed of daily in a manner approved by the Fire Official.

TABLE 12B
TABLE OF RECOMMENDED SEPARATION DISTANCES OF AMMONIUM NITRATE
AND BLASTING AGENTS FROM EXPLOSIVES OR BLASTING AGENTS^{a, f}

AMOUNT OF AMMONIUM NITRATE OR BLASTING AGENT		MINIMUM SEPARATION DISTANCE OF ACCEPTOR WHEN BARRICADED ^b (feet)		MINIMUM THICKNESS OF ARTIFICIAL BARRICADES ^e (inches)
		DONOR WEIGHT		
Pounds Over	Pounds Not Over	Ammonium Nitrate ^c	Blasting Agent ^d	
	100	3	11	12
100	300	4	14	12
300	600	5	18	12
600	1,000	6	22	12
1,000	1,600	7	25	12
1,600	2,000	8	29	12
2,000	3,000	9	32	15
3,000	4,000	10	36	15
4,000	6,000	11	40	15
6,000	8,000	12	43	20
8,000	10,000	13	47	20
10,000	12,000	14	50	20
12,000	16,000	15	54	25
16,000	20,000	16	58	25
20,000	25,000	18	65	25
25,000	30,000	19	68	30
30,000	35,000	20	72	30
35,000	40,000	21	76	30
40,000	45,000	22	79	35
45,000	50,000	23	83	35
50,000	55,000	24	86	35
55,000	60,000	25	90	35
60,000	70,000	26	94	40
70,000	80,000	28	101	40
80,000	90,000	30	108	40
90,000	100,000	32	115	40
100,000	120,000	34	122	50
120,000	140,000	37	133	50
140,000	160,000	40	144	50
160,000	180,000	44	158	50
180,000	200,000	48	173	50
200,000	220,000	52	187	60
220,000	250,000	56	202	60
250,000	275,000	60	216	60
275,000	300,000	64	230	60

- a. Recommended separation distances to prevent explosion of ammonium nitrate and ammonium-nitrate-based blasting agents by propagation from nearby stores of high explosives or blasting agents referred to in this Table as the “donor.” Ammonium nitrate, by itself, is not considered to be a donor when applying this Table. Ammonium nitrate, ammonium-nitrate fuel oil or combinations thereof are acceptors. If stores of ammonium nitrate are located within the sympathetic detonation distance of explosives or blasting agents, one-half the mass of the ammonium nitrate should be included in the mass of the donor.
- b. When the ammonium nitrate or blasting agent is not barricaded, the distances shown in this Table shall be multiplied by six. These distances allow for the possibility of high-velocity metal fragments from mixers, hoppers, truck bodies, sheet metal structures, metal containers and the like, which may enclose the “donor.” Where storage is in bullet-resistant magazines recommended for explosives, or where the storage is protected by a bullet-resistant wall, distances and barricade thicknesses in excess of those prescribed in Table 12A are not required.
- c. The distances in this Table apply to ammonium nitrate that passes the insensitivity test prescribed in the definition of ammonium nitrate fertilizer promulgated by the National Plant Food Institute; and ammonium nitrate failing to pass said test shall be stored at separation distances determined by competent persons and approved by the authority having jurisdiction.
- d. These distances apply to nitrocarbonitrates and blasting agents that pass the insensitivity test prescribed in DOT regulations.
- e. Earth or sand dikes, or enclosures filled with the prescribed minimum thickness of earth or sand, are acceptable artificial barricades. Natural barricades, such as hills or timber of sufficient density that the surrounding exposures that require protection cannot be seen from the “donor” when the trees are bare of leaves, are also acceptable.
- f. When the ammonium nitrate must be counted in determining the distances to be maintained from inhabited buildings, passenger railways and public highways, it may be counted at one-half its actual weight because its blast effect is lower.

**SECTION 1214
TRANSPORTATION**

1214.1 Every vehicle transporting blasting agents shall comply with all requirements of Subsection 1210.2, and they shall be marked or placarded on both sides, front and rear, with the words: "BLASTING AGENTS" in letters not less than 4 inches in height and approximately a $\frac{5}{8}$ -inch stroke on a contrasting background.

**SECTION 1215
SEIZURE**

1215.1 The Fire Official may seize, take, remove or cause to be removed at the expense of the owner all explosives, ammunition or blasting agents offered or exposed for sale, stored, possessed or transported in violation of this Chapter.

CHAPTER 13

FIREWORKS AND SPECIAL EFFECTS

SECTION 1301 GENERAL PROVISIONS

1301.1 Scope. Nothing in this Chapter shall be construed to prohibit the use of fireworks by railroads or other transportation agencies for signal purposes of illumination, or for signal or ceremonial purposes in athletics or sports.

SECTION 1302 DEFINITIONS

1302.1 Fireworks. Means and includes any combustible or explosive composition, or any substance or combination of substances, or device prepared for the purpose of producing a visible or an audible effect by combustion, explosion, deflagration or detonation, and shall include blank cartridges, toy pistols, toy cannons, toy canes or toy guns in which explosives are used; firecrackers, torpedoes, skyrockets, Roman candles, bombs, sparklers or other devices of like construction; and any devices containing any explosive or flammable compound, or any tablet or other device containing an explosive substance, except that the term “fireworks” shall not include any auto flares, paper caps containing an average not in excess of 0.25 grain of explosive content per cap, and toy pistols, toy canes, toy guns or other devices for use of such caps, the sale and use of which shall be permitted at all times.

1302.2 Special Effects. Means articles containing any pyrotechnic composition manufactured and assembled, designed or discharged in connection with television, theater or motion picture production, which may or may not be presented before live audiences and any other articles containing any pyrotechnic composition used for commercial, industrial, educational, recreational or entertainment purposes when authorized by the Fire Official or his authorized representative. Fireworks, as defined in Subsection 1302.1, may be considered special effects when, in the opinion of the Fire Official or his authorized representative, the fireworks constitute special effects application.

SECTION 1303 PERMITS

1303.1 Permits are required for the possession, use, distribution and display of fireworks and special effects.

1303.2 Application for permits shall be made in writing in a format prescribed by the Fire Official at least 10 days in advance of the date of the display.

1303.3 If such privilege is granted, possession, use and distribution of fireworks for such display shall be lawful for that purpose only.

1303.4 No permit granted hereunder shall be transferable.

1303.5 All permits issued shall comply with the provisions of Chapter 3.

SECTION 1304 FIREWORKS

1304.1 Manufacture, Sale, Discharge and Seizure. The manufacture of fireworks within the District is prohibited.

1304.2 It shall be unlawful for any person to offer for sale, expose for sale or sell at retail any fireworks within the District.

1304.3 It shall be unlawful for any person to use, explode or discharge any fireworks without a permit as specified in Subsection 1303.1.

1304.4 The Fire Official shall seize, take, remove or cause to be removed at the expense of the owner all stocks of fireworks offered or exposed for sale.

SECTION 1305 PUBLIC DISPLAY

1305.1 Every such use or display shall be handled by a competent operator approved by the Fire Official.

1305.2 Every such display shall be so located, discharged or fired so as not to be hazardous to property or endanger any person.

SECTION 1306 BOND REQUIRED

1306.1 The permittee shall furnish to the District a bond or Certificate of Insurance in an amount deemed adequate by the administrative authority for the payment of all damages, which may be caused either to a person or persons or to property by reason of the permitted display, and arising from any acts of the permittee, his agents, employees or subcontractors.

SECTION 1307 DISPOSAL

1307.1 Unfired Fireworks. Any fireworks that remain unfired after the display is concluded shall be immediately disposed of in accordance with Appendix C.

SECTION 1308 FIREWORKS IN PUBLIC ASSEMBLY OCCUPANCIES

1308.1 The display of fireworks (pyrotechnics) inside buildings or portions of buildings classified as public assembly occupancies may be permitted in accordance with requirements established by the Fire Official.

**SECTION 1309
TRANSPORTATION**

1309.1 For transporting purposes only, the term “fireworks” and the term “special effects” are interchangeable.

1309.2 Flammable liquids, acids, corrosive liquids, oxidizers or combustible materials shall not be included in any cargo of explosive materials.

1309.3 “EXPLOSIVE” signs or Department of Transportation (DOT) placards shall be displayed on all four sides of the transporting vehicle.

1309.4 All vehicles containing explosive materials shall be attended by at least one competent person at all times.

1309.5 At least two portable fire extinguishers, each having a minimum 4A60BC rating, shall be maintained on the vehicle.

1309.6 Provisions shall be made for securely lashing or bracing the load in place in the vehicle.

1309.7 Vehicles transporting explosives shall be properly maintained (i.e., brakes, lights and tires), and shall be clean from oil and grease.

1309.8 Smoking or the lighting of matches, or use of other flame-producing devices, is prohibited during transportation.

1309.9 Personnel who transport special effects or other explosives in any amount shall receive instructions from their employer on hazards of special effects and explosives, and the rules and safety precautions governing special effects and explosives.

**SECTION 1310
SPECIAL EFFECTS PERMITS**

1310.1 A permit shall be required for use of special effects whether indoors or outdoors.

**SECTION 1311
MAGAZINE REQUIREMENTS**

1311.1 Storage of special effects materials shall be in either a Class I or II magazine in accordance with Chapter 12.

**SECTION 1312
FUNCTIONS NOT COVERED**

1312.1 Functions not specifically covered shall be evaluated on an individual basis by the Fire Official.

1312.2 No function evaluated in Subsection 1312.1 shall be considered as precedent setting.

**SECTION 1313
WORK LOCATIONS**

1313.1 Special Effects Materials. A Class II magazine shall be provided for storage of explosive and special effects materials.

1313.2 Not more than 100 pounds of special effects material shall be stored per magazine.

1313.3 Magazines shall be kept locked at all times, except when supplies are being withdrawn.

1313.4 The quantity of material removed from the magazine shall be for immediate use only.

1313.5 No person shall mix any special effects material, except the designated Special Effects Operator.

1313.6 Smoking, matches, open flames, spark-producing devices and firearms shall be prohibited inside or within 50 feet of magazines or the designated work area.

1313.7 A distance of at least 150 feet shall be maintained between all Class II magazines and special effects explosions.

1313.8 No flammable liquids, acids, corrosive liquids, oxidizers or combustible materials shall be stored in close proximity to any special effects material.

1313.9 Only authorized Special Effects Operator(s) shall be in the area surrounding the work and storage area. A sign stating: “NO UNAUTHORIZED PERSONNEL PERMITTED IN THIS AREA BY ORDER OF THE REEDY CREEK EMERGENCY SERVICES” shall be conspicuously posted.

1313.10 No special effects material shall be abandoned.

**SECTION 1314
SPECIAL EFFECTS OPERATIONS**

1314.1 The Fire Prevention Division of the Reedy Creek Emergency Services shall be notified prior to any activity concerning special effects; which shall include, but not be limited to, opening magazines, mixing explosives, firing test shots or firing true shots.

1314.2 Short circuiting shunts shall be maintained on all electrically fired special effects during preparation.

1314.3 Connecting any electric-firing circuit to any power supply, except a test galvanometer, is prohibited until all special effects in the sequence are connected for actual firing.

1314.4 Power sources for firing special effects material shall be restricted to batteries or individually isolated, ungrounded generators used for firing purposes only. The use of commercial or house power circuits is prohibited.

1314.5 No special effects shall be fired unless it is in full view of the Special Effects Operator at the time of discharge.

1314.6 Smoking is prohibited during special effects operations.

1314.7 No person shall handle or use any special effects material while under the influence of intoxicating liquids or narcotics.

1314.8 The company or producer shall allocate sufficient time for the Special Effects Operator to prepare for the transportation, packing, storing, securing daily, or to dispose of or otherwise handle special effects materials in a safe manner.

SECTION 1315 VISUAL EFFECTS

1315.1 Fog and Smoke. The use of titanium tetrachloride and carbon tetrachloride is prohibited in producing fog and smoke visual effects.

1315.2 Fog and smoke may be produced utilizing approved liquids, incomplete combustion or pyrotechnics.

1315.3 The producing of fog or smoke inside structures shall have prior approval of the Fire Official. The Special Effects Operator shall provide the Fire Official with information as to the type of fog or smoke, and the method of producing the fog or smoke.

SECTION 1316 OPEN FLAME

1316.1 Activities. Permit application shall include the exact amount of flame required, conditions of usage and reasons why the flame cannot be simulated.

1316.2 Open flame fed from a flammable liquids reservoir or dipped in flammable liquid is prohibited.

1316.3 Open flame in fireplaces, campfires, cooking and similar devices inside buildings shall only be produced by natural gas burners, which have been approved by the AGA, the Reedy Creek Department of Building and Safety, and the Reedy Creek Emergency Services.

1316.4 Candles are limited to three for any one use. Candles must be firmly fixed to prevent easy movement or tipping and shall not be moved when lighted.

1316.5 There shall be no unnecessary movement, such as, but not limited to, dancing, running or jumping, within 6 feet of open flame.

1316.6 No decorative materials, even if flame-retardant treated, shall be located within 6 feet of open flame.

1316.7 A flame-retardant table cloth may be permitted to be used with candles.

1316.8 Storage of LP gas inside a building is prohibited.

1316.9 Personnel shall be present and have in their possession a portable fire extinguisher for each open flame activity. This person with the portable fire extinguisher shall be no more than 25 feet from the open flame activity.

1316.10 A firewatch standby person shall be required for all open flame activities.

SECTION 1317 FIRES/EXPLOSIONS

1317.1 Vehicles and Watercrafts. The arrangements, rigging and setting of explosives or fire shall be under the immediate direction and control of the designated Special Effects Operator who must perform the actual act of setting off the fire and/or explosion.

1317.2 Fuel tanks shall be removed from the vehicle and/or watercraft prior to the delivery of the vehicle or watercraft to the location site.

1317.3 All combustibles on the interior of the vehicle or watercraft shall be removed prior to the delivery of the vehicle or watercraft to the location site. Interior combustibles shall include, but not be limited to, upholstery fabrics and padding, headliner, carpets and similar materials.

1317.4 Flammable liquids shall be in approved safety containers.

1317.5 The vehicle doors, hood and trunk shall be safety cabled to prevent such items from sailing away when the vehicle is blown up. Similar safeguards are required for watercraft.

1317.6 When there are people in attendance as witnesses other than that part of the film crew immediately involved in the filming, glass may be required to be removed.

1317.7 Standby fire protection equipment shall be provided as required by the conditions of the permit. Standby fire apparatus may be required.

1317.8 The Fire Prevention Division of the Reedy Creek Emergency Services shall be notified at least 30 minutes prior to the fire or explosion.

SECTION 1318 SPECIAL EFFECTS IN PLACES OF ASSEMBLY

1318.1 The Fire Official shall be notified of any changes or alteration(s). All changes or alterations are subject to this Chapter and Appendix B.

CHAPTER 14

FIRE PROTECTION

SECTION 1401 GENERAL PROVISIONS

1401.1 General. Authorized representatives of the Fire Official, as may be in charge at the scene of a fire or other emergency involving the protection of life or property, or any part thereof, shall have the power and authority to direct such operation as may be necessary to extinguish or control any fire; perform any rescue operation; investigate the existence of suspected or reported fires, gas leaks, or other hazardous conditions or situations; or of taking any other action necessary in the reasonable performance of their duty. In the exercise of such power, the Fire Official may prohibit any person, vehicle, vessel or object from approaching the scene and may remove or cause to be removed or kept away from the scene any vehicle, vessel, or object which may impede or interfere with the operations of the Fire Official, and any person not actually and usefully employed in the extinguishing of such fire, or in the preservation of property in the vicinity thereof.

1401.2 Any person who obstructs the operations of the Reedy Creek Emergency Services in connection with extinguishing any fire or other emergency, or disobeys any lawful command of the Fire Official or officer of the Reedy Creek Emergency Services who may be in charge at such a scene, or any part thereof, or any security or police officer assisting the Reedy Creek Emergency Services, shall be guilty of a misdemeanor.

SECTION 1402 FIRE CONTROLS

1402.1 Tampering with Fire Equipment. No person shall molest, tamper with, damage or otherwise disturb any apparatus, equipment or appurtenance belonging to or under the supervision and control of the Reedy Creek Emergency Services.

SECTION 1403 REMOVAL

1403.1 No person shall remove, tamper with or otherwise disturb any fire hydrant or fire appliance required to be installed or maintained under the provisions of this Code, except for the purpose of extinguishing fire, training purposes, recharging or making necessary repairs, or when permitted by the Fire Official. Whenever a fire appliance is removed as herein permitted, it shall be replaced or reinstalled as soon as the purpose for which it was removed has been accomplished.

SECTION 1404 FIRE BARRIER

1404.1 Personnel of the Reedy Creek Emergency Services in charge at the scene of an emergency shall have the authority to place ropes, guards, barricades or other obstructions across any street, alley, place or private property in the vicinity of

such operation so as to prevent an accident or interference with the lawful efforts of the Reedy Creek Emergency Services to manage and control the situation and to handle fire apparatus.

SECTION 1405 TAMPERING

1405.1 Barriers, Etc. No person, unless authorized or a public officer acting within the scope of his public duties, shall remove, unlock, destroy, tamper with or otherwise molest in any manner any lock, gate, door, barricade, chain, enclosure, sign, tag or seal that has been lawfully installed by the Fire Official or by his order or under his control.

SECTION 1406 OBSTRUCTION

1406.1 Fire Hydrants. No person shall place or keep any fence, growth, trash or other material near any fire hydrant that would prevent such hydrant from being immediately discernible or in any other manner hinder the Reedy Creek Emergency Services from gaining immediate access to a fire hydrant.

1406.2 No person shall use or operate any hydrant or other valve installed on any water system intended for the use of the Reedy Creek Emergency Services for fire suppression purposes, and that is accessible to any public highway, alley or private way open to, or generally used by, the public unless such person first secures a permit for such use.

SECTION 1407 ACCESS

1407.1 Access to Buildings by Fire Apparatus. Every building hereafter constructed shall be accessible to fire department apparatus by way of access roadways with all-weather driving surface of not less than 20 feet of unobstructed width, with an adequate turning radius of 46 feet outside and 38 feet inside; and capable of supporting imposed loads of fire apparatus and a minimum vertical clearance of 13 feet, 6 inches, except as required by Subsection 3703.2.

1407.2 Every building hereafter constructed shall be accessible to fire apparatus from at least three sides of the structure. Alternatives due to design or natural barriers may require, but are not limited to, additional fire protection that meets the requirements of the Building Official and the Fire Official.

1407.3 The required width of access roadways shall not be obstructed in any manner, including the parking of vehicles. Installation of "NO PARKING" signs or other appropriate notice, or of approved obstructions inhibiting parking, may be required and, if installed, such obstructions shall be maintained.

1407.4 The Fire Official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

1407.5 A turnaround for fire apparatus shall be provided where an access road is a dead end and is in excess of 150 feet in length. The turnaround shall meet width, height and turning radius requirements in Subsection 1407.1.

SECTION 1408 ACCESS PANELS

1408.1 Windowless Walls. An access door or covered opening with suitable hardware and identifying marking shall be installed in the exterior wall on each floor above the main floor, with free access into the building.

1408.2 Such access shall have a minimum net clear opening height dimension of 48 inches and a minimum net clear opening width of 32 inches and with the bottom of the opening not more than 32 inches above the floor.

1408.3 The exterior of the opening shall have distinctive markings for purpose of ease in locating panels.

1408.4 Such access opening(s) shall open into a fire aisle within the building and no shelving, loose or fixed, no containers or equipment of any description, nor any loose merchandise shall be placed to block the aisle way.

1408.5 Openings shall be so placed that there will be one opening in each 50 feet of exterior wall on each accessible side of the building. Buildings equipped with an automatic sprinkler system throughout shall have access panels as set forth previously for each 200 feet of wall.

SECTION 1409 INSTALLATION AND MAINTENANCE OF FIRE PROTECTION SYSTEMS AND APPLIANCES

1409.1 Installation. The Fire Official shall designate the type and number of appliances to be installed and maintained in and upon all buildings and premises. Such appliances shall be of a type suitable for the probable class of fire associated with such premises. The designation of appliances shall be based on the requirements of NFPA 72 (2007), this Code, the *EPCOT Building Code* or State regulations, whichever is more restrictive.

1409.2 In occupancies of a hazardous nature in the judgment of the Fire Official, or where special hazards exist in addition to the normal hazard of the occupancy, or where access for fire apparatus is unduly difficult in the judgment of the Fire Official, additional safeguards may be required by the Fire Official and such safeguards may consist of one or more of the following: automatic fire detection system, fire alarm system, automatic fire-extinguishing system, standpipe systems for the Fire Department or for both the occupants and the Fire Department, portable or fixed fire extinguishers, fire blankets, breathing apparatus, or manual or automatic covers. Fire protection extinguishing apparatus required under this Section shall be installed in accordance with the applicable provision of this Code.

1409.3 Fire Protection Systems. The contractor and/or building owner shall furnish, for approval by the Fire Official, three complete sets of plans depicting kitchen and sprinkler systems prior to a permit being issued.

1409.4 Plans Required. Three complete sets of the following documents shall be submitted, for approval by the Fire Official, prior to installation as specified in the *EPCOT Electrical Code*.

- (a) Scope of work and theory of operations narrative.
- (b) Catalog sheets on all items, including wire proposed for the system.
- (c) System installation instructions.
- (d) Shop drawings with connection diagrams, including point to point.
- (e) A one-line riser diagram of the entire system.
- (f) System commissioning instructions.
- (g) Battery calculations showing proper back-up battery sizing.
- (h) Voltage drop calculations for all notification appliance circuits (NAC).
- (i) Capacitance calculations for all signaling line circuits (SLC).
- (j) Input/output matrix showing all input types, output types and their expected correlation(s) for proper system operation.

SECTION 1410 FIRE HYDRANTS

1410.1 Requirements. Fire hydrants shall be installed with a maximum distance of 500 feet between hydrants measured along road travel.

1410.2 All premises on which buildings or portions of buildings are located more than 150 feet from a public street, shall be provided with approved fire hydrants connected to a water system capable of supplying the fire-water flow required by the Fire Official and the Building Official. The location and number of such hydrants shall be approved by the Fire Official.

1410.3 A maximum distance of 50 feet shall be maintained between a hydrant and a fire department connection.

1410.4 When practical, fire department connections and fire hydrants will be at the curb or roadside of approaching fire apparatus and meet the approval of the Fire Official.

SECTION 1411 MAINTENANCE

1411.1 All extinguishing systems, fire hydrant systems, standpipe systems, fire alarm or detection systems, portable or fixed fire extinguishers, and other protective systems or appliances required by this Code or otherwise installed shall be so maintained as to be capable of operation at all times. They shall be replaced or repaired when found to be defective by management or other authority. Maintenance shall be performed in accordance with NFPA or other recognized standards.

1411.2 The owner, tenant or lessee of every building or structure shall be responsible for the care and maintenance of all fire protection systems, including equipment and devices, to insure the safety and welfare of the occupants. Fire protection systems shall not be disconnected or otherwise rendered unserviceable without first notifying the Reedy Creek Emergency Services. When installations of required fire protection systems are interrupted for repairs or other necessary reasons, the owner, tenant or lessee shall immediately advise the Reedy Creek Emergency Services and shall diligently pursue the restoration of the protection.

1411.3 In the event an approved alarm system with a pre-signal feature fails to be maintained as required, the Fire Official may eliminate the pre-signal feature and require the system to operate as a general audible alarm-type system.

SECTION 1412 VAPORIZING LIQUID EXTINGUISHERS

1412.1 Only those vaporizing liquid-extinguishing agents recognized as safe in NFPA 10, *Installation of Portable Fire Extinguishers*, shall be used in portable fire extinguishers, unless specific written approval is obtained from the Fire Official.

SECTION 1413 DEFECTIVE EXTINGUISHERS

1413.1 No person shall sell or trade any form, type or kind of fire extinguisher that is not approved, or that is not in proper working order, or the contents of which do not meet the requirements of this Code or the applicable referenced standard; provided, however, this shall not apply to the sale or trade of fire extinguishers to any person or firm engaged in the business of selling or servicing of such extinguishers, or the sale or exchange of obsolete or damaged equipment for junk.

SECTION 1414 RV PARKS AND MOBILE HOME PARKS

1414.1 In all trailer camps, there shall be installed and maintained in good repair, $\frac{3}{4}$ -inch standpipes connected to water mains, to which shall be permanently affixed a hose, not greater than 100 feet in length with a nozzle. A sufficient number of these standpipe units shall be installed in each trailer camp so that at least one nozzle will reach a trailer or trailer site.

SECTION 1415 FIRE-EXTINGUISHING SYSTEMS

1415.1 Special Definitions.

- (a) **Approvals.** The complete layout of all fire-extinguishing systems shall be approved by the Fire Official and the Building Official, except hydraulic calculations for sprinkler systems shall be approved by the Building Official prior to issuance of the building permit.
- (b) **Class I System.** A Class I system shall provide a 2½-inch hose outlet to supply water for use by the Fire Department and those trained in handling heavy streams.

- (c) **Class II System.** A Class II system shall provide a 1½-inch hose outlet to supply water for use primarily by the building occupants or the Fire Department during initial response.
- (d) **Class III.** A Class III system shall provide a 1½-inch hose outlet to supply water for use by building occupants and a 2½-inch hose outlet to supply a larger volume of water for use by the Fire Department and those trained in handling heavy streams.
- (e) **Combination Standpipe.** An approved system designed and supplied from the automatic sprinkler system.
- (f) **Dry Standpipe.** Not approved in the District.
- (g) **Wet Standpipe.** An approved system designed with a constant water supply.

1415.2 General. All fire-extinguishing systems shall be installed in accordance with the requirements of this Chapter and the *EPCOT Building Code*.

1415.3 All hose threads used in connection with the fire-extinguishing system shall comply with the standards of the District.

SECTION 1416 DETAILED REQUIREMENTS

1416.1 Water Supply. Automatic sprinkler systems shall be connected to an approved water supply of adequate pressure, capacity and reliability for the requirements of the system.

1416.2 Connections. Automatic sprinkler systems may be connected to the domestic water supply main when approved by the Building Official, and when the domestic water supply is reliable and has sufficient pressure, capacity and pipe sizing for the combined domestic and sprinkler system requirements. When connected to the domestic water supply, the connection between the public water main and the sprinkler system shall be made between the main or meter and the shutoff valve of the building, with no intervening valves or connections.

1416.3 Reducers and Restrictors. The use of water reducers and restrictors in any water main used for fire water protection shall not be permitted unless approved by the Fire Official.

SECTION 1417 SPRINKLER SYSTEM

1417.1 Testing and maintenance shall be in accordance with NFPA standards.

1417.2 A water flow alarm and drain test shall be conducted at least once a year, with all components checked for proper operation and a written record maintained for inspection by the Fire Official.

1417.3 All sprinkler systems shall be supervised facilities as prescribed in the *EPCOT Building Code*.

1417.4 Sprinkler systems exposed to freezing temperatures shall be insulated.

Exception: When permitted by the *EPCOT Building Code*, a dry pipe system complying with EPCOT Standard 7-10 may be installed in areas subject to freezing.

1417.5 Accessibility to Sprinkler Control Valves. All sprinkler control valves shall be accessible to authorized persons. Permanent ladders, chain-operated hand wheels or other accepted means will be provided when necessary, and meet the approval of the Fire Official and the Building Official.

1417.6 Fire Hose Cabinets and Fire Hose Stations. Fire hose cabinets and fire hose stations shall be installed in all buildings three or more stories in height. Fire hose is not required, except where specified in other Chapters of this Code or when required by the Fire Official.

1417.7 Fire Department Standpipes. Fire department standpipes shall be constructed and installed as required in the *EPCOT Building Code*.

1417.8 All buildings of three or more stories shall be equipped with one or more fire department standpipes. The standpipes may be connected to the automatic sprinkler systems as provided in the *EPCOT Building Code*.

1417.9 There shall be one fire department or combination standpipe outlet connection installed at every floor level of every required enclosed stairway or smoke-protected enclosure.

1417.10 An approved, durable sign with raised letters at least 1 inch high reading: "FIRE DEPARTMENT STANDPIPE" shall be permanently attached to all fire department standpipe connections.

1417.11 Fire department standpipes shall be located so that all parts of the building are within 20 feet of a nozzle attached to 100 feet of hose.

1417.12 Fire department standpipes may be supplied by the same mains as the fire-extinguishing system.

1417.13 Combination Standpipes. Combination standpipes, as defined in Subsection 1415.1, shall be constructed and installed as required in the *EPCOT Building Code* and this Code.

1417.14 When a combination standpipe system is installed in accordance with this Code, a separate fire department standpipe system need not be installed. One combination standpipe shall be installed for every required stairway or smoke-protected enclosure that extends from the ground floor to the roof in all buildings four or more stories in height.

1417.15 Class I system outlets may be outside the stair enclosure but shall be immediately adjacent thereto. When a smoke-protected enclosure is provided, the standpipe connection shall be in the vestibule, except as otherwise approved by the Fire Official and the Building Official.

1417.16 In buildings where more than one Class I system is installed, the system shall be cross connected at the bottom.

1417.17 Water supply and construction shall be as required in the *EPCOT Building Code*.

1417.18 An approved durable sign with raised letters at least 1 inch high reading: "Class I Systems" shall be permanently attached to all fire department standpipe connections.

SECTION 1418 FIRE ALARMS

1418.1 Fire Alarm Detection and Evacuation Systems. A fire alarm detection and evacuation system in accordance with NFPA 72 shall be installed in all occupancies.

Exception: A fire alarm detection and evacuation system is not required in Group A-7, R-3, S-1, S-4, S-5, S-6 and S-7 occupancies, temporary occupancies, construction trailers for the duration of the construction project, and manufactured buildings less than 3,200 square feet.

1418.2 Monitored Systems. All required fire alarm detection and evacuation systems shall be remotely monitored for alarm, trouble and supervisory signal. Remote monitoring shall be by a monitoring system or agency in compliance with EPCOT Standard 7-21.

1418.3 Manual Fire Alarm Boxes. Manual fire alarm boxes shall be readily accessible, unobstructed and located in direct exit pathway to each exit. Additional manual fire alarm boxes shall be located so that travel distance to the nearest box does not exceed 200 feet. Actuation of a manual fire alarm box shall activate the fire evacuation notification appliances. Manual fire alarm boxes shall not automatically activate the fire evacuation notification appliances in special amusement buildings.

1418.4 Alarm Zones. Each floor shall be zoned separately. No one zone may exceed 20,000 square feet. The length of any zone shall not exceed 200 feet in any direction. Alarm zone indicating panels shall be located at the direction of the Fire Department. Annunciators shall lock in place until the system is reset.

1418.5 Visual and Audible Alarms. Alarm notification appliances listed for fire alarm use shall be provided. Visible and audible notification appliances shall be installed and so located to be heard or seen by all occupants in every occupied space within the building. Audible alarm notification appliances shall utilize a temporal evacuation signal. Such devices shall provide a sound pressure level of 15 dBA above the ambient sound level measured 5 feet above the floor in every occupied space within the building. The minimum sound pressure shall be 60 dBA in all occupancies, with the exception of Group R occupancies where the minimum sound pressure shall be 70 dBA. The maximum sound pressure level for audible notification appliances shall not exceed 120 dBA at the minimum hearing distance from the audible appliance. Audible notification appliances shall be synchronized in areas where multiple audible notification appliances exist. Visible notification appliances shall be located and rated in accordance with the *EPCOT Accessibility Code for Building Construction*®. Visible notification appliances shall be synchronized in areas where multiple visible notification appliances exist.

1418.6 Phone Jacks. Fire-fighter phone jacks shall be provided with protective covers.

1418.7 Fire Evacuation Notification. Activation of smoke detection systems, manual fire alarm pull stations or automatic sprinklers may not be required to sound the audible alarm system at the discretion of the Fire Official.

1418.8 System Control Unit. Fire alarm detection and evacuation systems control unit shall be provided with an NAC manual activation and bypass switches, shall be color coded red; air-handler shutdown and bypass switches, shall be color coded blue. Additional bypass switches shall be provided for door holders, shutter releasing circuits and other fire alarm system controlled devices. Actuation of the NAC shall result in a fire summary alarm output. Actuation of any other device shall result in a fire alarm trouble output.

1418.9 Acceptance Tests. Upon completion of the installation, a test of the entire system shall be made in the presence of the Fire Department. All functions of the fire alarm system shall be tested in accordance with EPCOT Standard 7-21.

1418.10 Completion Documents. Four copies of all as-built drawings and completed NFPA 72 Certificate of Completion forms shall be provided during the final testing and acceptance.

1418.11 Additional Requirements. Three spare smoke detectors of each type used shall be provided to the owner during the final testing. Three sets of keys or tools necessary for normal operation of the fire alarm equipment shall be provided to the Fire Department. Three sets of spare break glass covers for all types of break glass devices shall be provided.

1418.12 Service Notification. Persons who service, repair or test fire alarm equipment or fire protection sprinkler systems shall notify the Reedy Creek Emergency Service's Fire Communications Center prior to the beginning of work and completion of any test or repair.

1418.13 The alarm shall be designed to be heard clearly by all occupants within the building or designated portions thereof as is required for the public address system. The acceptable level is 15 db above the ambient sound level measured 5 feet above the floor in the occupied area.

1418.14 A public address system for occupant notification of information may be required by the Fire Official.

1418.15 If provided, alarm annunciation panels shall not reset any alarm and/or trouble signals from the primary control panel.

1418.16 Specialized smoke detectors for the deaf and hearing impaired shall be available upon request by the guest in public lodging establishments at a rate of at least one per 50 dwelling units or portions thereof, not to exceed five per lodging facility.

1418.17 At least one approved product of combustion detector, suitable for the intended use, shall be installed in:

- (a) Every mechanical equipment, electrical, transformer, telephone equipment, elevator machine or other room with similar hazards.
- (b) Where applicable, each elevator lobby at each floor in compliance with the provisions of the *EPCOT Building Code*.
- (c) Recirculating air systems shall be as specified in the *EPCOT Mechanical Code*.

Installations shall meet applicable requirements of EPCOT Standard 7-21.

1418.18 An approved single-station or multiple-station smoke detector shall be installed in accordance with Chapter 2 of NFPA 72 within every dwelling and every dwelling unit within an apartment house, condominium, town house, and each guest or sleeping room in a hotel, motel or dormitory. The smoke detector shall be located and installed in accordance with the manufacturer's recommendations. Where more than one detector is required to be installed within an individual dwelling unit or room, the detectors shall be wired in such a manner that the actuation of any smoke detector will actuate all of the smoke detector notification alarms within the individual dwelling unit or room. The audible notification alarm shall be temporal. Accessible guest rooms shall be provided with smoke detector(s) with combined audible/visual alarm notification appliances. The visual indicator shall be a strobe rated at 177 candela. These smoke detectors shall receive their operating power from a lighting circuit within the room or shall be supervised and remotely monitored by AM&CS for loss of operating power.

1418.19 Manual fire alarm pull station and protective covers shall be installed in accordance with NFPA requirements.

1418.20 Where fire-fighter phone jacks are required, covers shall be installed.

SECTION 1419 SPECIAL PROVISIONS FOR HIGH-RISE STRUCTURES

1419.1 General. These additional requirements shall apply to all buildings having a floor level used for human occupancy located more than 75 feet above the lowest level of fire apparatus access.

1419.2 Fire Alarm Detection System. A fire alarm detection and communication system shall be installed in all high-rise structures. The system shall comply with Sections 1418 and 1419.

1419.3 Central Control Station. See Subsection 1419.9.

1419.4 Smoke Control Systems. See Subsection 1419.10.

1419.5 Smoke Detection Systems. At least one approved product of combustion detector suitable for the intended use shall be installed in:

- (a) Every mechanical equipment, electrical, transformer, telephone equipment, elevator machine or other room with similar hazards.
- (b) Each elevator lobby at each floor and each detector shall comply with the provisions of the *EPCOT Building Code*.
- (c) Recirculating air system as specified in the *EPCOT Mechanical Code*.

Installations shall meet applicable requirements of EPCOT Standard 7-21.

1419.6 Communications Systems. Three communication systems shall be provided as follows:

- (a) **Voice Alarm System.** The operation of any smoke detector, fire protection sprinkler, fire protection water flow device or manual fire alarm box shall automatically activate the voice alarm system. The voice alarm system

shall provide a predetermined message on a selective basis to the area where the alarm originated.

1. The voice alarm shall provide information and give directions to the occupants.
2. The central control station shall contain controls for the voice alarm system so that a selective or general voice alarm may be manually initiated.
3. The system shall be continuously electrically supervised against component failure of the audio path, including amplifiers, speaker wiring, switches and electrical contacts, and shall detect opens and shorts that might impair the function of the system.
4. Activation of the system shall automatically sound three rounds of a temporal alert signal followed by the voice instructions giving appropriate information.
5. The audible notification appliances shall be designed to be heard clearly by all occupants within the building or designated portions thereof as is required for public address system. The acceptable level is 15 dBA above the ambient sound level measured 5 feet above the floor in occupied area.
6. Visual notification appliances shall be located in compliance with the *EPCOT Accessibility Code for Building Construction*.

(b) **Public Address System.** A public address communications system designed to be clearly heard by all occupants of the building shall operate from the central control station. It shall be established on a selective or general basis to the following areas:

1. Elevators.
2. Elevator lobbies.
3. Corridors.
4. Exit stairways.
5. Rooms and tenant spaces exceeding 1,000 square feet or more in area.
6. Dwelling units in apartment houses.
7. Hotel guest rooms and suites.

(c) **Fire Department Communication System.** A two-way fire department communications system shall be provided. It shall operate between the central control station and every elevator, elevator lobby, entry to enclosed exit stairways and corridors. The fire department communications system shall be connected to an approved emergency services power source.

1419.7 Phone Jacks. Fire-fighter phone jacks shall be provided with protective covers.

1419.8 System Operation. The voice alarm system and the public address system shall be designed and installed such that damage to any terminal unit or speaker will not render more than one zone of the system inoperative. The voice

alarm system and public address system may be a combined system.

1419.9 Central Control Station. A central control station for fire department operations shall be provided in a location approved by the Fire Official. It shall contain:

- (a) The voice alarm and public address system panels.
- (b) The fire department communications panel.
- (c) Fire detection and alarm system annunciator panels.
- (d) Status indicators showing the location of elevators in the hoistways.
- (e) Status indicators and controls for air-handling systems.
- (f) Sprinkler valves and water flow detector display panels.
- (g) Emergency power, light and emergency system controls, and status indicators.
- (h) A telephone for Reedy Creek Emergency Services use with controlled access to the public telephone system.
- (i) Controls for simultaneously unlocking all locked stairway doors.

1419.10 Ventilation. Mechanical ventilation for the removal of products of combustion shall be provided in every story and shall consist of one of the following:

- (a) **Ventilation Equipment.** The mechanical air-handling equipment shall be designed to accomplish smoke removal. Under fire conditions, the return and exhaust air shall be moved directly to the outside without recirculation to other sections of the building. The supply fans shall provide 100 percent outside air. The area involved shall have a minimum of one air change every 10 minutes to meet this requirement.
- (b) **Alternate Designs.** Any other approved design that will produce equivalent results and is acceptable to the Building Official and the Fire Official.

SECTION 1420 MANUFACTURED BUILDINGS

1420.1 Scope. This Section shall apply to the installation of manufactured buildings and similar buildings, including those used for construction sites or temporary events.

1420.2 Definition.

- (a) **Manufactured Building.** A structure, transported on a separate vehicle in one or more sections, designed to be used as dwelling, commercial, institutional, storage, industrial structures with permanent foundation, which may include plumbing, heating and air conditioning, and electrical manufactured in accordance with the Florida Manufactured Building Act of 1979, in Section 553, Part IV, of the Florida Statutes, administered and promulgated by the Rules and Regulations of the Florida Department of Community Affairs.

1420.3 Manufactured buildings less than four units wide or containing less than 3,200 square feet in area shall be provided with an approved single-station or multiple-station smoke detector installed in all common areas of the structure and in accordance with NFPA 72. The smoke detector(s) shall be located and installed in accordance with the manufac-

turer's recommendations. Where more than one detector is required, the detectors shall be wired in such a manner that the actuation of any detector will actuate all smoke detector notification alarms on the same circuit. The notification alarm shall be combined audible/visual notification appliances. The audible signal shall be temporal, the visual indicator shall be a strobe rated at 177 candelas. These smoke detectors shall receive their operating power from a dedicated AC power breaker and shall be supervised and remotely monitored.

Exception: Monitoring may not be required when approved by the Fire Official.

1420.4 Manufactured buildings four or more units wide or greater than or equal to 3,200 square feet shall be provided with a fire sprinkler system and a fire alarm system complying with Section 1418.

If the combined cubic feet per minute of the air-handler units exceeds 15,000, complete area smoke detection is required in lieu of duct detectors and any smoke detector in alarm must shut down all air handlers.

1420.5 Occupancy Separation. Manufactured buildings shall have the following separations:

- (a) Minimum of 25 feet between any manufactured building and a permanent building.
- (b) Minimum of 15 feet between any manufactured buildings.

1420.6 Decks and Canopies. Manufactured buildings interconnected with combustible decking or an overhead awning shall have their total square footage added to the manufactured building(s) to determine compliance with Subsections 1420.1 and 1420.2.

Exception: Any connecting combustible walkway not more than 5 feet in width without an overhead awning.

SECTION 1421 GROUP A-5 OCCUPANCIES WITHIN SPECIAL AMUSEMENT BUILDINGS AND STRUCTURES

1421.1 Accessories to Fire Alarm Detection Devices. Group A-5 occupancies within special amusement buildings and structures shall have a fire alarm detection and evacuation system as defined in Section 1418 with the following modifications:

- (a) **Activation of Notification Appliance.** Manual fire alarm boxes, fire protection sprinkler or water flow devices, or smoke detectors shall not automatically activate the notification appliance circuits. These devices shall:
 1. Stop confusing sounds and other visual effects that interfere with exiting the facility.
 2. Activate approved directional exit markings, if extinguished.
 3. Cause illumination of the means of egress with light as provided in Subsection 813.2 of the *EPCOT Building Code*.
 4. Visually notify the attraction's operators of an emergency condition at the load area.

(b) **Manual Activation.** A switch shall be provided in the fire alarm control panel to manually activate the building's notification appliance circuits. On activation of this switch, the following shall occur automatically:

1. Stop confusing sounds and other visual effects that interfere with exiting the facility.
2. Activate approved directional exit marking, if unlit during normal operation.
3. Cause illumination of the means of egress with light as provided in Subsection 813.2 of the *EPCOT Building Code*.
4. Visually notify the attraction's operators of an emergency condition at the load area.
5. Activate the facilities alarm notification appliances.

SECTION 1422 GROUP S-4 OCCUPANCIES

1422.1 See Chapter 36 for specific requirements pertaining to mobile homes, recreational vehicles, trailers and portable buildings.

SECTION 1423 BUILDINGS UNDER CONSTRUCTION

1423.1 Fire Protection. During construction of a building and until the permanent fire-extinguishing system is in service, fire protection shall be provided in accordance with the requirements set forth in the *EPCOT Building Code*.

1423.2 In buildings exceeding three stories, not less than one wet standpipe shall be installed for use of the Reedy Creek Emergency Services during construction of the building. When any point in a building shall be more than 100 feet from the standpipe outlet, additional standpipes shall be provided.

1423.3 Standpipes of not less than 4 inches shall be installed when the construction has reached the third-floor level or 50 feet above grade, whichever is reached first.

1423.4 Standpipes shall be equipped with 2½-inch siamese fire department inlet connections at locations accessible to fire apparatus and serving a stairway that is usable during construction. Standpipe systems shall be extended as construction progresses to within one floor of the highest point where secured decking or flooring has been constructed.

1423.5 A 2½-inch valved hose outlet reduced to a 1½-inch hose outlet shall be installed at each floor conforming to the requirements of the *EPCOT Building Code*.

1423.6 Free access from the street to fire hydrants, and to outside connections for standpipes, sprinklers or other fire-extinguishing equipment, whether permanent or temporary, shall be provided and maintained at all times. During building operations, free access to permanent, temporary or portable first-aid fire equipment shall be maintained at all times. During construction, when combustibles are brought onto the site in such quantities as deemed hazardous by the Fire Official.

FIRE PROTECTION

cial, access roads and a suitable supply of water acceptable to the Fire Official shall be provided and maintained.

1423.7 Each hose outlet shall be equipped with 100 feet of rubber-lined hose and an adjustable nozzle. Hose shall be stored in an approved rack and be pre-connected, ready to use at all times during construction. The rack shall be provided with a sign reading: "FIRE HOSE FOR EMERGENCY USE ONLY."

1423.8 It shall be unlawful to use, tamper with or attach any type of a device to a fire department standpipe for other than emergency fire-fighting purposes.

1423.9 Temporary standpipes may be installed in lieu of permanent standpipes during construction. Temporary standpipes shall remain in service until the permanent system is in service.

1423.10 When construction height requires the installation of a fire pump, it shall be equipped with automatic starting equipment and shall be installed to maintain a minimum supply of 75 gallons of water per minute at 50 pounds per square inch at each standpipe location at all times during construction.

1423.11 Where a building has been constructed to a height greater than one story, at least one lighted stairway shall be provided that meets the requirements of Section 806 of the *EPCOT Building Code*. The stairway shall follow the progression of the building construction.

Exception: When approved by the Building Official, a temporary, lighted stairway may be installed until a permanent lighted stairway is available for use.

1423.11.1 During demolition, the stairway shall remain accessible, clear of obstructions and lighted, and follow the building down during the demolition process. The stairway shall be protected from falling debris.

CHAPTER 15

APPLICATION OF FLAMMABLE FINISHES

SECTION 1501 GENERAL PROVISIONS

1501.1 Scope. This Chapter shall apply to locations or areas where the following activities are conducted:

- (a) The application of flammable or combustible paint, varnish, lacquer, stain, or other flammable or combustible liquid applied as spray by compressed air, “airless” or “hydraulic atomization,” or by steam, or electrostatic methods, or by any other means in continuous or intermittent processes;
- (b) Dip tank operations in which articles or materials are passed through contents of tanks, vats or containers of flammable or combustible liquids, including coating, finishing, treatment and similar processes; and
- (c) The application of combustible powders when applied by powder spray guns, electrostatic powder spray guns, fluidized beds or electrostatic fluidized beds.

SECTION 1502 SMOKING PROHIBITED

1502.1 Smoking shall be prohibited in any spray finishing areas and in the vicinity of dip tanks. “NO SMOKING” signs with lettering of approved size shall be conspicuously posted in such areas.

SECTION 1503 WELDING WARNING SIGNS

1503.1 Conspicuous signs shall be posted in the vicinity of all spraying areas, dipping operations and paint storage rooms conveying the following warning:

NO WELDING

The use of welding or cutting equipment in or near this area is dangerous because of fire and explosion. Welding and cutting shall be done only under the supervision of the foreman in charge.

SECTION 1504 ELECTRIC WIRING AND EQUIPMENT

1504.1 Electric wiring and equipment shall conform to the provisions of this Chapter and shall otherwise be installed in accordance with the *EPCOT Electrical Code*.

SECTION 1505 DEFINITIONS

1505.1 Spray Booth. A power-ventilated structure provided to enclose or accommodate a spraying operation, to confine

and limit the escape of spray, vapor and residue, and to safely conduct or direct them to an exhaust system.

1505.2 Spraying Area. Any area in which dangerous quantities of flammable vapors or combustible residues, dusts or deposits are present due to the operation of spraying processes, and shall include the interior of spray booths, the interior of ducts exhausting from spraying processes, or any area in the direct path of spray or any area containing dangerous quantities of air-suspended powder, combustible residue, dust, deposits, vapor or mists as a result of spraying operations.

1505.3 Spraying Rooms. Rooms designed to accommodate spraying operations and shall comply with the *EPCOT Building Code* requirements for a special hazardous occupancy.

SECTION 1506 LOCATION OF SPRAY FINISHING OPERATIONS

1506.1 Spray finishing operations shall not be conducted in buildings used for assembly, educational, institutional or residential occupancies, except in a room designed for the purpose, protected with an approved system of automatic sprinklers, and separated vertically and horizontally from other areas by construction complying with the requirements of the *EPCOT Building Code*.

1506.2 In other occupancies, all spraying operations performed inside of a building shall be conducted in an approved spray booth or in spraying areas approved for such use.

SECTION 1507 SPRAY BOOTHS

1507.1 Spray booths shall be constructed of steel no less than No. 18 U.S. gauge, securely and rigidly supported, or of concrete or masonry, or other approved noncombustible materials.

1507.2 The interior surfaces of spray booths shall be smooth and continuous without edges, and shall be so constructed to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning, and shall be so designed to confine residues within the booth.

1507.3 The floor shall be of noncombustible material or shall be covered with a noncombustible, non-sparking material.

1507.4 Each spray booth shall be separated from other operations by not less than 3 feet, or by an approved wall or partition.

1507.5 All portions of a spray booth shall be readily available for cleaning.

1507.6 When spray booths are illuminated, it shall be done by the use of 1/4-inch-thick wired or tempered glass panels in the top or sides of spray booths with electrical light fixtures outside the booth.

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1507.7 Unless specifically approved for locations containing both deposits of readily ignitable residue and explosive vapors, there shall be no electrical equipment in any spraying area whereon deposits of combustible residues may readily accumulate, except wiring in rigid conduit, or boxes or fittings containing no taps, splices or terminal connections.

1507.8 Space heating appliances, steam pipes or hot surfaces shall not be located in a spraying area where deposits of combustible residues may readily accumulate.

1507.9 Where spraying is intermittently conducted entirely inside a conventional cabinet spray booth, an average air velocity of approximately 100 linear feet per minute across the open frontal booth area (fan capacity in cubic feet per minute divided by the frontal area in square feet) shall be provided. Where spraying operations are extensive, or where canopy of downdraft spray booths are used, additional ventilation may be required.

1507.10 A lower rate of exhaust ventilation may be employed in electrostatic spraying. Such rate shall not be lower than 60 linear feet per minute.

SECTION 1508 DRY SPRAY BOOTHS

1508.1 Dry spray booths may be equipped with filter pads or dry filter rolls, which are designed to prevent excessive accumulations of deposit in ducts and residue to duct outlet. The space within such spray booth shall be protected with automatic sprinklers on both the upstream and downstream sides of the filters. Visible gauges, audible alarms or pressure-activated devices shall be installed to indicate or insure that the required air velocity is maintained. Residue-impregnated filters or filter rolls shall be immediately removed to a safe, well detached location or placed in a water-filled container and disposed of at the close of the day's operations.

SECTION 1509 WATERWASH SPRAY BOOTHS

1509.1 Waterwash spray booths, if installed, shall be of an approved design so as to effectively prevent excessive accumulations of deposit in ducts and residue at duct outlet. Such booths shall be so arranged that air and overspray are drawn through a continuously flowing water curtain before entering the exhaust duct to the building exterior. The water curtain may be formed by water discharge from perforated pipes in the top rear of the booth flowing over baffles into a water vat at the base of the booth. Residue from the vat shall be disposed of in an approved manner.

SECTION 1510 CLEANING

1510.1 The interior of spray booths, exhaust fan blades and exhaust ducts shall be regularly cleaned to avoid the accumulation of residues.

SECTION 1511 ELECTRICAL GROUND

1511.1 All metal parts of spray booths, exhaust ducts and piping systems conveying flammable liquids shall be properly electrically grounded in accordance with the *EPCOT Electrical Code*.

SECTION 1512 VENTILATION

1512.1 All spraying areas shall be provided with mechanical ventilation adequate to prevent the dangerous accumulation of vapors, and to remove such vapors to a safe location.

1512.2 Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and dry finishing material residue to be exhausted.

1512.3 Each spray booth shall have an independent exhaust duct system discharging to the building exterior, except multiple-cabinet spray booths in which identical spray finishing material is used with a combined frontal area of not more than 18 square feet may have a common exhaust. If more than one fan serves one booth, all fans shall be so interconnected that one fan cannot operate without operating all. Air exhausted from spraying operations shall not be recirculated.

1512.4 Electric motors driving exhaust fans shall not be placed inside booths or ducts. The fan-rotating element shall be non-ferrous or non-sparking, or the casting shall consist of or be lined with such material.

1512.5 Belts shall not enter the duct or booth unless belts and pulleys within the duct or booth are tightly enclosed.

1512.6 Exhaust ducts shall be constructed of steel and shall be substantially supported.

1512.7 The discharge point for exhaust ducts in a paint spray booth shall be not less than 5 feet from adjoining combustible construction, nor less than 30 feet from adjoining exterior wall openings, except for waterwash spray booths.

1512.8 Exhaust ducts shall have a clearance from unprotected combustible construction or material of not less than 18 inches. Where combustible construction is provided with protection applied to all surfaces within 18 inches, clearances may be reduced if the combustible material is protected with a listed fire-rated assembly approved for the intended use.

SECTION 1513 STORAGE AND HANDLING OF FLAMMABLE OR COMBUSTIBLE LIQUIDS

1513.1 The storage and handling of flammable or combustible liquids shall be in accordance with Chapter 16 and shall also conform to the provisions of this Section.

1513.2 Where the quantity of liquid in 5-gallon and smaller containers other than original sealed containers, exceeds a total of 10 gallons, it shall be stored in a storage cabinet conforming to this Code or in storage of mixing rooms conforming to this Code.

1513.3 Original closed containers, approved portable tanks, approved safety cans or a properly arranged system of piping shall be used for bringing flammable or combustible liquids into spray finishing areas. Open containers shall not be used.

1513.4 Containers supplying spray nozzles shall be of a closed type or provided with metal covers kept closed. Containers not resting on floors shall be on noncombustible supports or suspended by wire cables. Containers supplying spray nozzles or gravity flow shall not exceed a 10-gallon capacity.

1513.5 All containers or piping to which is attached a hose or flexible connection shall be provided with a shutoff valve at the connection. Such valves shall be kept shut when spraying operations are not being conducted.

1513.6 Heaters shall not be located in spray booths, nor other locations subject to the accumulation of deposits or combustible residue.

1513.7 If flammable or combustible liquids are supplied to spray nozzles by positive displacement pumps, a pump discharge line shall be provided with an approved relief valve discharging to pump suction or to a safe detached location.

1513.8 Whenever flammable liquids are transferred from one container to another, both containers shall be bonded and grounded. Piping systems for flammable liquids shall be permanently bonded and grounded.

1513.9 Glass containers shall not be used.

SECTION 1514 FIRE PROTECTION EQUIPMENT

1514.1 Portable fire protection equipment shall be provided near all spraying areas as may be required by the Fire Official.

1514.2 Sprinkler Heads. Sprinkler heads that are installed in spray booths shall be protected from overspray residue.

SECTION 1515 OPERATIONS AND MAINTENANCE

1515.1 All spraying areas shall be kept free from the accumulation of deposits of combustible residues as practical, with cleaning conducted daily if necessary.

1515.2 Scrapers, spuds or other such tools used for cleaning purposes shall be of non-sparking material.

1515.3 Residue scraping and debris contaminated with residue shall be immediately removed from the premises and properly disposed of.

1515.4 The use of solvents for cleaning operations shall be restricted to Class II and III liquids, except solvents with flash points not less than those normally used in spraying operations may be used for cleaning spray nozzles and auxiliary equipment, provided such cleaning is conducted inside spray booths and ventilating equipment is operating during cleaning.

1515.5 Spray booths shall not be alternately used for different types of coating materials, where the combination of the materials may be conducive to spontaneous ignition, unless

all deposits of the first used material are removed from the booth and exhaust ducts prior to spraying with the second.

1515.6 Approved metal waste cans shall be provided wherever rags or waste are impregnated with finishing materials and all such rags or waste deposited therein immediately after use. The contents of waste cans shall be properly disposed of at least once daily and at the end of each shift.

SECTION 1516 DRYING APPARATUS

1516.1 Drying apparatus shall, in addition to conforming to the requirements of this Chapter, comply with the applicable provisions of Chapter 24.

1516.2 Spray booths, rooms or the enclosures used for spraying operations shall not alternately be used for the purpose of drying by any arrangement that will cause a material increase in the surface temperature of the spray booth, room or enclosure.

1516.3 Except as specifically provided in this Section, drying or baking units, utilizing a heating system having open flames or that may produce sparks shall not be installed in a spraying area as defined in this Chapter, but may be installed adjacent thereto when equipped with an interlocked ventilating system arranged to:

- (a) Thoroughly ventilate the drying space before the heating system can be started;
- (b) Maintain a safe atmosphere at any source of ignition; and
- (c) Automatically shut down the heating system in the event of a failure of the ventilating system.

1516.4 Automobile refinishing booths or enclosures, otherwise installed and maintained in conformance to this Section, may alternately be used for drying with portable infrared drying apparatus when conforming to the following:

- (a) Interior of spray enclosures shall be kept free of overspray deposits.
- (b) During spray operations, the drying apparatus and electrical connections and wiring thereto shall not be located within the spray enclosure and not in any other location where spray residue may be deposited thereon.

1516.5 Spraying apparatus, drying apparatus and ventilating system of the spray enclosure shall be equipped with suitable interlocks so arranged that:

- (a) Spraying apparatus cannot be operated while drying apparatus is inside spray enclosure;
- (b) Spray enclosure will be purged of spray vapors for a period of not less than 3 minutes before drying apparatus can be energized; and
- (c) Ventilating system will maintain a safe atmosphere within the enclosure during the drying process, and drying apparatus will automatically shut off in the event of a failure of the ventilating system.

1516.6 All electrical wiring and equipment of drying apparatus shall be reasonably safe to person and property, and shall be installed in accordance with the provisions of the *EPCOT Electrical Code*. Only equipment of a type approved for Class

APPLICATION OF FLAMMABLE FINISHES

I, hazardous locations, in accordance with the *EPCOT Electrical Code*, shall be located within 18 inches of floor level. All metallic parts of drying apparatus shall be properly electrically bonded and grounded.

SECTION 1517 LOCATION OF DIP TANK OPERATIONS

1517.1 Dip tank operations shall not be conducted in buildings used for assembly, institutional or residential occupancies, except in a room designed for the purpose, protected with an approved system of automatic sprinklers, and separated vertically and horizontally from other areas by construction complying with the provisions of the *EPCOT Building Code*.

SECTION 1518 VENTILATION OF VAPOR AREA

1518.1 All vapor areas shall be provided with mechanical ventilation adequate to prevent the dangerous accumulation of vapors and to remove the vapors from the area.

1518.2 Required ventilating systems shall be so arranged that the failure of any ventilating fan shall automatically stop any dipping conveyor system.

SECTION 1519 CONSTRUCTION OF DIP TANKS

1519.1 Dip tanks, including drain board if provided, shall be constructed of substantial noncombustible material and their supports shall be of heavy metal, reinforced concrete or masonry.

1519.2 Dip tanks of more than 150 gallons in capacity or 10 square feet in liquid surface area shall be equipped with a properly trapped overflow pipe leading to a safe location outside buildings.

1519.3 The bottom of the overflow connection shall be not less than 6 inches below the top of the tank.

1519.4 Dip tanks of more than 500 gallons in liquid capacity shall be equipped with bottom drains automatically and manually arranged to quickly drain tanks in the event of fire, unless the viscosity of the liquid at normal atmospheric temperature makes this impractical. Manual operation shall be from a safely accessible location. Where gravity flow is not practicable, automatic pumps shall be provided. Such drains shall be trapped and discharge to a closed, properly vented salvage tank or to a safe outside location.

1519.5 Dip tanks utilizing a conveyor system shall be so arranged that in the event of fire, the conveyor system shall automatically cease motion and required bottom drains shall open.

SECTION 1520 STORAGE AND HANDLING OF FLAMMABLE LIQUIDS

1520.1 The storage and handling of flammable liquids shall be in accordance with this Code.

SECTION 1521 ELECTRICAL AND OTHER SOURCES OF IGNITION

1521.1 There shall be no open flames, spark-producing devices or heated surfaces having a temperature sufficient to ignite vapors in any vapor area.

1521.2 Electrical wiring and equipment in any vapor areas shall be of an explosion proof type approved for use in such hazardous locations. Such an area shall be considered a Class I, hazardous location, in accordance with the *EPCOT Electrical Code*.

1521.3 Unless specifically approved for locations containing both deposits of readily ignitable residues and explosive vapors, there shall be no electrical equipment in the vicinity of dip tanks or associated drain boards or drying operations, which are subject to splashing or dripping of dip tank liquids, except wiring in rigid conduit, or in threaded boxes or fittings containing no taps, splices or terminal connections, and except as hereinafter specifically permitted in this Chapter relating to electrostatic apparatus.

1521.4 In any floor space outside a vapor area, but within 20 feet therefrom and not separated by tight partitions, there shall be no open flames or spark-producing devices, except drying and baking apparatus may be installed adjacent to vapor areas when conforming to this Code. Such an area shall be considered a Class I, hazardous location, in accordance with the *EPCOT Electrical Code*.

SECTION 1522 OPERATIONS AND MAINTENANCE

1522.1 Areas in the vicinity of dip tanks shall be kept as clear of combustible stock as practicable and shall be kept entirely free of combustible debris.

1522.2 When waste or rags are used in connection with dipping operations, approved metal waste cans shall be provided and all impregnated rags or water deposited therein immediately after use. The contents of waste cans shall be disposed of at the end of each shift by methods approved by the Fire Official.

SECTION 1523 FIRE CONTROL

1523.1 Areas in the vicinity of dip tanks shall be provided with manual fire extinguishers suitable for flammable or combustible liquids fires, as specified for extra hazardous occupancies in NFPA 10.

1523.2 Dip tanks of more than a 150-gallon capacity or 4-square-foot liquid surface shall be protected by an approved automatic fire-extinguishing system.

SECTION 1524 DIP TANK COVERS

1524.1 Covers arranged to close automatically in the event of fire shall be actuated by approved automatic devices and shall also be arranged for manual operation.

1524.2 Covers shall be of substantial noncombustible material or of tinclad type with enclosing metal applied with locked joints.

1524.3 Chains or wire rope shall be used for cover support or operating mechanism where the burning of a cord would interfere with the action of a device.

1524.4 Covers shall be kept closed when tanks are not in use.

SECTION 1525 HARDENING AND TEMPERING TANKS

1525.1 Hardening and tempering tanks shall conform to this Chapter, as well as to the following Subsections, but shall be exempt from other provisions of this Code.

1525.2 Tanks shall be located as far as practicable from furnaces and shall not be located on or near combustible floors.

1525.3 Tanks shall be provided with a noncombustible hood and vent, or other equally effective means, venting to the outside of the building to serve as a vent in case of fire. All such vent ducts shall be treated as flues and be kept away from combustible roofs or materials.

1525.4 Tanks shall be equipped with a high-temperature limit switch arranged to sound an alarm when the temperature of the quenching medium reaches 50°F below the flash point.

1525.5 Hardening and tempering tanks of more than a 500-gallon capacity or 25-square-foot liquid surface area shall be protected as specified in Subsection 1523.2.

1525.6 Air under pressure shall not be used to fill or agitate oil in tanks.

SECTION 1526 COATING OPERATIONS

1526.1 Flow Coat. Except as modified in this Section, all of the preceding standards for dip tanks apply.

1526.2 All flow coat operations shall be within an effective noncombustible enclosure, adequately vented to the outside of the building. All piping shall be strongly erected and rigidly supported.

1526.3 Paint shall be supplied by direct low-pressure pumping arranged to automatically shut down by means of approved heat actuated devices, in case of fire, or paint may be supplied by a gravity tank not exceeding 10 gallons in capacity.

1526.4 The area of the sump and any areas on which paint flows shall be considered the area of the dip tank for the purpose of this Section.

SECTION 1527 ROLL COATING

1527.1 The processes of roll coating, spreading and impregnating in which fabrics, papers or other materials are passed directly through a tank containing flammable liquids, or over the surface of a roller that revolves partially submerged in a flammable liquid, shall conform to this Section and to the applicable provisions of this Code.

1527.2 Adequate arrangements shall be made to prevent sparks from static electricity by electrically bonding and grounding all metallic rotating and other parts of machinery and equipment, and by the installation of static collectors or maintaining a conducive atmosphere by means such as high relative humidity.

SECTION 1528 ELECTROSTATIC APPARATUS

1528.1 Equipment Type and Location. Electrostatic apparatus and devices, used in connection with coating operations, shall be of approved types.

1528.2 Transformers, power packs, control apparatus and all other electric portions of the equipment, with the exception of high-voltage grids and electrostatic atomizing heads, the head gun, and their connections, shall be located outside of the spraying or vapor areas as defined in Subsection 1505.1 or shall otherwise conform to the requirements of Subsections 1511.1 and 1521.1.

1528.3 Electrodes and electrostatic atomizing heads shall be of substantial construction, and shall be effectively insulated from ground. Insulators shall be non-porous and noncombustible.

SECTION 1529 CONTROLS

1529.1 A safe distance shall be maintained between goods being painted and electrodes, or conductors of at least twice the sparking distance. A suitable sign indicating the safe sparking distance shall be conspicuously posted near the assembly.

1529.2 Electrostatic apparatus shall be equipped with automatic controls that will operate without time delay to disconnect the power supply to the high-voltage transformer and to signal the operator under any of the following conditions:

- (a) Stoppage of ventilating fans or failure of ventilating equipment from any cause.
- (b) Stoppage of the conveyor carrying goods past the high-voltage grid.
- (c) Occurrence of a ground or an imminent ground at any point on the high-voltage system.
- (d) Reduction of clearance below that specified in this Section.

SECTION 1530 GUARDS AND SIGNS

1530.1 Adequate booths, fencing, railings or guards shall be placed about the equipment to assure that a safe isolation of the process is maintained from plant storage or personnel. Such railings, fencing and guards shall be of conductive material, adequately grounded, and shall be at least 5 feet from processing equipment.

1530.2 Signs designating the process zone as dangerous in regards to fire and accident shall be posted.

SECTION 1531 VENTILATION

1531.1 The spraying area shall be adequately ventilated so as to insure a safe condition from a fire and health standpoint.

SECTION 1532 MAINTENANCE

1532.1 Insulators shall be kept clean and dry.

1532.2 Drip plates and screens subject to paint deposits shall be removable and shall be taken to a safe place for cleaning.

SECTION 1533 AUTOMOBILE UNDERCOATING

1533.1 Operations Included. When approved by the Fire Official, automobile undercoating spray operations, conducted in areas having adequate natural or mechanical ventilation, may be exempt from the provisions of this Chapter, when using undercoating materials that are not more hazardous than kerosene, or undercoating materials using only solvents having a flash point in excess of 100°F. Undercoating spray operations not conforming to this Subsection shall be subject to all applicable requirements of this Chapter.

SECTION 1534 POWDER COATING

1534.1 Scope. This Section shall apply to finely ground particles of protective finishing material applied in dry powder form by means of a fluidized bed, electrostatic fluidized bed, powder spray guns or electrostatic powder spray guns.

SECTION 1535 LOCATION AND CONSTRUCTION

1535.1 Powder coating operations shall be conducted in completely enclosed rooms constructed of noncombustible materials, or enclosed powder coating facilities that are adequately ventilated, or adequately ventilated spray booths meeting the requirements of Subsection 1507.1.

SECTION 1536 ELECTRICAL AND OTHER SOURCES OF IGNITION

1536.1 Electrical equipment and other sources of ignition shall conform to the requirements of the *EPCOT Electrical Code*.

1536.2 When the application of powders by means of non-electrostatic fluidized bed or powder spray gun requires the part to be preheated (preheating is also sometimes used with electrostatic equipment), care shall be taken to insure that the temperature of the part to be coated does not exceed the ignition temperature of the powder being used.

1536.3 Precautions shall be taken to minimize the possibility of ignition by static electrical sparks through static grounding, or powder transport, application and recovery equipment.

SECTION 1537 VENTILATION

1537.1 Exhaust ventilation shall be sufficient to maintain the atmosphere below the lowest explosive limits for the material being applied. All non-deposited air-suspended powders shall be safely removed via exhaust ducts to the powder recovery cyclone or receptacle.

SECTION 1538 OPERATION AND MAINTENANCE

1538.1 All areas shall be kept free of the accumulation of powder coating dusts, particularly such horizontal surfaces as ledges, beams, pipes, hoods, booths and floors.

1538.2 Surfaces shall be cleaned in such a manner as to avoid scattering dust to other places or creating dust clouds; vacuum-sweeping equipment approved for use in hazardous locations should be used.

1538.3 "NO SMOKING" signs shall be conspicuously posted at all powder coating areas and powder storage rooms.

SECTION 1539 FIXED ELECTROSTATIC SPRAYING EQUIPMENT

1539.1 The provisions of this Section shall apply to fixed electrostatic equipment.

SECTION 1540 ELECTROSTATIC FLUIDIZED BEDS

1540.1 Electrostatic fluidized beds and associated equipment shall be of approved types. The maximum surface temperature of this equipment in the coating area shall not exceed 150°F. The high-voltage circuits shall be designed so as not to produce a spark of sufficient intensity to ignite any powder-air mixtures, nor result in shock hazard upon coming in contact with a ground object under normal operating conditions.

1540.2 Transformers, power packs, control apparatus and all other electrical portions of the equipment, with the exception of the charging electrodes and their connections to the power supply, shall be located outside of the powder coating area or shall otherwise conform to the requirements of this Chapter.

1540.3 All electrically conductive objects within the charging influence of the electrodes shall be adequately grounded. The powder coating equipment shall carry a prominent, permanently installed warning regarding the necessity for grounding these objects.

1540.4 Objects being coated shall be maintained in contact with the conveyor or other support in order to insure proper grounding. Hangers shall be regularly cleaned to insure effective contact and areas of contact shall be sharp points or knife edges where possible.

1540.5 The electrical equipment shall be so interlocked with the ventilation system that the equipment cannot be operated unless the ventilation fans are in operation.

SECTION 1541 ORGANIC PEROXIDES AND DUAL COMPONENT COATINGS

1541.1 General. All spraying operations involving the use of organic peroxides and other dual component coatings shall be conducted in approved sprinklered spray booths meeting the requirements of this Chapter. Only spray guns and related handling equipment specifically manufactured for use with organic peroxides shall be used. Separate pressure vessels and inserts specific for the application shall be used for the resin and for the organic peroxide, and they shall not be interchanged.

1541.2 Organic peroxide pressure tank inserts shall be constructed of stainless steel or polyethylene.

1541.3 Dusts or overspray residues resulting from the sanding or spraying of finishing materials containing organic peroxides shall not be mixed with other materials.

1541.4 All spilled peroxides shall be promptly removed so there are no residues. Spilled material may be absorbed by using a noncombustible absorbent and then promptly disposed of in accordance with the manufacturer's recommendation.

1541.5 All spraying operations involving the use of organic peroxides and other dual component coatings shall be conducted in approved sprinklered spray booths, meeting the requirements of this Chapter.

SECTION 1542 STORAGE AND HANDLING

1542.1 Organic peroxides shall be stored in a cool, detached building apart from other finishing materials, and only minimum daily requirements shall be brought to the processing area; such material remaining at the spraying station at the end of a day's operation shall be disposed of. Organic peroxides shall be kept away from all sources of heat, including steam pipes, radiators, open flames, sparks and solar radiation.

1542.2 Organic peroxides shall be handled in such a manner to avoid shock and friction, which can cause decomposition and a violent reaction.

1542.3 Organic peroxides shall not be mixed directly with any accelerators or promoters as violent decomposition or explosion may result.

1542.4 Only non-sparking tools shall be used in any area where organic peroxides are stored, mixed or applied.

1542.5 Only specifically trained personnel shall be permitted to work with these materials.

1542.6 Smoking shall be prohibited and "NO SMOKING" signs shall be posted in the area.

CHAPTER 16

FLAMMABLE AND COMBUSTIBLE LIQUIDS

SECTION 1601 GENERAL PROVISIONS

1601.1 Scope. This Chapter shall apply to liquids with a flash point below 200°F; and to liquids with flash points above 200°F that, when heated, assume the characteristics of liquids with flash points below 200°F, except as provided in this Chapter.

1601.2 This Chapter shall not apply to the transportation of flammable liquids when in conformance to the Department of Transportation (DOT) regulations lawfully on file with and approved by the DOT.

1601.3 All equipment for the storage, handling and dispensing of flammable and combustible liquids shall be in accordance with NFPA 30, except as otherwise provided in this Chapter or in other laws or regulations legally in effect.

1601.4 The flash point of liquids having a flash point at or below 175°F, except for fuel oils and certain viscous materials, shall be determined in accordance with *Standard Method of Test for Flash Point by the Tag Closed Tester*, ASTM D56.

1601.5 The flash point of liquids having a flash point above 175°F, except for fuel oils, shall be determined in accordance with *Standard Method of Test for Flash Point by the Cleveland Open Cup Tester*, ASTM D92.

1601.6 The flash point of fuel oil, and certain viscous materials having a flash point at or below 175°F, shall be determined in accordance with *Standard Method of Test for Flash Point by the Pensky-Martens Closed Tester*, ASTM D93.

SECTION 1602 DEFINITIONS

1602.1 Boil-Over. The expulsion of crude oil (or certain other liquids) from a burning tank in which the light fractions of the crude oil burn off producing a heat wave in the residue that, on reaching a water strata, may result in the expulsion of a portion of the contents of the tank in the form of a froth.

1602.2 Boiling Point. The boiling point of a liquid at a pressure of 14.7 pounds per square inch. Where an accurate boiling point is unavailable for the material in question, or for mixtures that do not have a constant boiling point, for purposes of this classification, the 10 percent of a distillation performed in accordance with *Standard Method of Test for Distillation of Petroleum Products*, ASTM D86, may be used as the boiling point of the liquid.

1602.3 Chemical Plant. A plant or that portion of a plant, other than a refinery or distillery, where flammable or combustible liquids are produced by chemical reactions or used in chemical reactions.

SECTION 1603 CONTAINERS, TANKS, EQUIPMENT AND APPARATUS

1603.1 Containers, tanks, equipment and apparatus used or intended to be used for the storage, handling, use or sale of flammable or combustible liquids shall be of an approved type. Glass containers shall not be approved, except where contamination is a factor.

SECTION 1604 WARNING LABELS FOR CONTAINERS OF FLAMMABLE LIQUIDS

1604.1 Warning labels shall conform to the Federal Hazardous Substance Labeling Act. All flammable liquids; flammable and liquid compounds; or mixtures manufactured, packaged or offered for sale shall be conspicuously marked or labeled in easily legible type, which is in contrast by typography, layout or color with any other printed matter on the label.

1604.2 This Section does not apply to foods, drugs or cosmetics, or when the container is labeled in accordance with the regulations of the DOT.

1604.3 Flammable liquids having a flash point of 20°F or below shall have the following label:

DANGER! **EXTREMELY FLAMMABLE**

Keep Away from Heat, Sparks and Open Flame
Keep Closed When Not In Use

1604.4 Flammable liquids having a flash point of 20°F to 80°F shall have the following label:

WARNING! **FLAMMABLE**

Keep Away from Heat, Sparks and Open Flame
Keep Closed When Not In Use

1604.5 Flammable liquids having a flash point of 80°F to 150°F shall have the following label:

CAUTION! **COMBUSTIBLE**

Keep Away from Heat, Sparks and Open Flame
Keep Closed When Not In Use

SECTION 1605 HAZARDOUS APPLIANCES PROHIBITED

1605.1 Heating, Lighting and Cooking. A person shall not use, within a building, structure or dwelling, any heating, lighting or cooking appliance that uses Class I flammable liquids.

SECTION 1606 UNLAWFUL SALE OF FLAMMABLE LIQUIDS

1606.1 It shall be unlawful for any person to sell or offer for sale flammable liquids with a flash point of 100°F or less, for the express purpose of domestic cleaning.

SECTION 1607 DISPENSING

1607.1 Dispensing devices for flammable or combustible liquids shall be of an approved type.

1607.2 Flammable liquids shall not be dispensed by gravity from tanks, drums, barrels or similar containers. An exception may be granted where the nature of the liquid to be dispensed makes such a restriction impractical. Approved pumps taking suction from the top of the container shall be used. Flammable or combustible liquids shall not be dispensed by a device that operates through pressure within a storage tank or container, unless such has been approved as a pressure vessel for the use to which it is subjected. In no case shall air or oxygen pressure be used.

SECTION 1608 PROHIBITIONS

1608.1 Flammable or combustible liquids, or any waste liquid containing crude petroleum or its products, shall not be permitted to be discharged into or upon any street, highway, drainage canal or ditch, storm drain or channel, lake or tidal waterway, or upon the ground.

1608.2 No flammable liquid with a flash point below 100°F shall be used within a building for washing parts or removing grease or dirt unless it is used in a closed machine approved for the purpose or in a separate, well-ventilated room constructed in accordance with Subsection 1620.1.

1608.3 Special precaution shall be taken in areas where sources of ignition are located where flammable vapors may be present. Sources of ignition include, but are not limited to, open flames, lightning, smoking, cutting and welding, static, frictional heat, electrical and mechanical sparks, spontaneous ignition and radiant heat.

SECTION 1609 TANK STORAGE AND BULK STORAGE ABOVE GROUND

1609.1 Restricted Locations. The storage of flammable and combustible liquids in above-ground tanks shall be in the restricted areas set forth by the Fire Official and meet the requirements of NFPA 30.

1609.2 Above-ground tanks for the storage of flammable and combustible liquids may be installed at construction sites when approved by the Fire Official. Installation shall be in accordance with NFPA 30.

SECTION 1610 FIRE PROTECTION FOR ABOVE-GROUND TANKS

1610.1 Fire protection shall be provided in accordance with nationally recognized standards. Foam fire protection may be required by the Fire Official for any above-ground tank or pressure tank for the storage or handling of Class I flammable liquids when such tank or group of tanks spaced less than 50 feet apart, shell to shell, has a liquids surface area in excess of 1,500 square feet.

1610.2 When such tank or tanks are used for the storage of crude oil.

1610.3 When such tank or tanks are used for in-process products handling and are located within 100 feet of any fired still, heater, related fractioning or processing apparatus, or similar device at a processing plant or petroleum refinery as herein defined.

1610.4 Foam fire protection may be required when an unusual exposure hazard exists because of typographical conditions; nature of occupancy and proximity on the same or adjoining property, and height and character of construction of such buildings; capacity, construction and maintenance of such tanks and character of liquids to be stored; degree of private fire protection to be provided; and facilities of the Fire Department to cope with flammable and combustible liquid fires.

1610.5 Where foam fire protection is required for any tank or group of tanks used for the storage of more than one product, the largest tank or tanks in such group may be considered as storing the product requiring the greatest amount of protection and such protection shall be available as herein provided.

1610.6 Where foam fire protection is required, installation shall meet the requirements of NFPA 11. Where tank shells are accessible for the erection of portable foam applicators, for at least three-quarters of their perimeter, portable foam applicators shall be approved.

1610.7 Foam fire protection materials shall be immediately available at the storage location at all times.

SECTION 1611 UNDERGROUND

1611.1 A flammable or combustible liquid storage tank may be located underground, if such installation meets the requirements of this Section. The tank shall be so located with respect to existing foundations and supports that the loads carried by the latter cannot be transmitted to the tank. The distance from any part of a tank storing Class II or III liquids to the nearest wall of any basement, pit, cellar or property line shall be not less than 1 foot. The distance from any part of a tank storing Class I liquids to the nearest wall of any basement, pit or cellar shall be not less than 1 foot and from any property line not less

than 3 feet. A minimum distance of 1 foot, shell to shell, shall be maintained between underground tanks.

1611.2 Excavation for underground storage tanks shall be made to avoid undermining of foundations of existing structures. Underground tanks shall be installed on foundations and shall be bedded and covered in accordance with NFPA 30. Underground tanks shall be protected in a manner approved by the Fire Official.

SECTION 1612 INSIDE OF BUILDINGS

1612.1 Tanks for storage of flammable or combustible liquids shall not be installed inside buildings, except as provided in accordance with the construction and occupancy separation requirements of the *EPCOT Building Code* for a special hazardous occupancy. Tanks for the storage of flammable liquids may be installed under a building as an underground tank complying with Subsection 1611.1.

SECTION 1613 ABANDONMENT

1613.1 A permit shall be obtained from the Fire Official to remove, abandon, place temporarily out of service or otherwise dispose of any flammable or combustible liquid tank.

1613.2 Any tank not used for a period of 90 days shall be properly safeguarded or removed.

1613.3 Any tank that has been abandoned for a period of one year shall be removed from the property. If circumstances warrant, however, such tank may be abandoned in place and safeguarded in a manner approved by the Fire Official.

1613.4 Tanks that are to be re-used shall be tested in an approved manner.

1613.5 Corrosion Protection. Corrosion protection for the tank and its piping shall be provided as approved by the Fire Official.

SECTION 1614 CONNECTIONS

1614.1 Vent pipes from tanks storing flammable or combustible liquids shall be so located that the discharge point is outside of buildings. This vent shall terminate above normal snow levels, but in any case not less than 8 feet above the fill opening and not less than 12 feet above the adjacent ground level. Such pipes shall discharge only upward or horizontally in order to disperse vapors. Vent pipes 2 inches or less in nominal inside diameter shall not be obstructed by devices that will cause excessive backpressure. Vent pipe outlets shall be so located that flammable vapors will not enter building openings or be trapped under eaves or other obstructions. Vent pipes shall be provided with a vacuum and pressure relief devices as required in NFPA 30, or there shall be an approved flame arrester located in the vent line at the outlet.

1614.2 Vent lines from tanks underground or in buildings shall be used for no other purposes.

1614.3 Each tank shall be vented through piping adequate in size to prevent blow-back of vapor or liquid at the fill opening while the tank is being filled. Vent pipes shall be not less than 1¼ inches nominal inside diameter. The size shall depend upon the filling or withdrawal rate, whichever is larger, the vent line length and the tank design pressure.

1614.4 Vent pipes shall be so laid as to drain toward the tank without sags or traps in which liquid can collect. They shall be located so that they will not be subjected to physical damage. Vent pipes from tanks storing the same class of liquids may be connected into one outlet pipe. When tank vent piping is manifolded, pipe sizes shall be such as to discharge, within the pressure limitation of the system, the vapors they may be required to handle when manifolded tanks are filled simultaneously. The lower end of a vent pipe shall enter the tank through the top.

1614.5 Fill and discharge lines for Class I, II and III liquids shall enter tanks only through the top and shall be sloped toward the tank.

1614.6 The fill-pipe opening shall be located outside of any building. For flammable and combustible liquid storage the fill-pipe opening shall be not less than 5 feet from any door or cellar opening. The fill-pipe opening shall be closed and liquid tight when not in use. Fill pipe for filling by tank car or tank truck shall not be larger than 4 inches nominal inside diameter. Fill-pipe openings shall be identified.

1614.7 Gauge openings, if independent of fill pipe, shall be provided with a liquid-tight cap or cover. If inside a building, each such opening shall be protected against liquid overflow and possible vapor release in an approved manner.

1614.8 Testing. All tanks, and that piping which is in a suction system, before being covered or placed in use, shall be tested hydrostatically or with air pressure, at not less than 3 pounds per square inch gauge (psig), nor more than 5 psig. Pressure piping shall be tested to 1½ times the working pressure or 75 psig, whichever is greater. Tests shall be maintained for at least 30 minutes and shall be witnessed by the Fire Official.

SECTION 1615 MATERIALS FOR PIPING, VALVES AND FITTINGS

1615.1 Design. Piping, valves and fittings for flammable and combustible liquids shall be designed for working pressures and structural stresses to which they may be subjected. They shall be of steel or other material suitable for use with the liquid being handled. Pipe wall thickness shall be determined in accordance with nationally recognized good practice, except that carbon steel pipe shall not be thinner than standard wall thickness pipe. Pipe wall thickness shall be determined according to the provisions of ANSI B31.3 and ANSI B31.4.

1615.2 Pipe joints dependent upon the friction characteristics of combustible materials for mechanical continuity of piping shall not be used inside of buildings. They may be used outside of buildings, above or below ground. If used above ground, the piping shall either be secured to prevent disengagement at the fitting or the piping system shall be so

designed that any spill resulting from such disengagement could not unduly expose persons, buildings or structures, and could be readily controlled by remote valves.

1615.3 All piping for flammable or combustible liquids, both above ground and underground, where subject to external corrosion, shall be painted or otherwise protected.

1615.4 Pipe systems shall be substantially supported and protected against physical damage and excessive stresses arising from settlement, vibration or contraction.

1615.5 Valves. Pipe systems shall contain a sufficient number of valves to operate the system properly and to protect the plant. Pipe systems, in connection with pumps, shall contain a sufficient number of valves to control properly the flow of liquid in normal operation and in the event of physical damage. Connections to pipe lines by which equipment, such as tank cars or tank vehicles, discharge flammable or combustible liquids by means of pumps into storage tanks, shall be provided with check valves for automatic protection against backflow if the piping arrangement is such that backflow from the system is possible.

SECTION 1616 CONTAINER AND PORTABLE TANK STORAGE

1616.1 Scope. This Section shall apply to the storage and dispensing of flammable or combustible liquids in drums or other containers not exceeding a 60-gallon individual capacity and those portable tanks not exceeding a 660-gallon individual capacity. These requirements do not apply to bulk plants, service stations, refineries, chemical plants and distilleries.

SECTION 1617 STORAGE INSIDE BUILDINGS

1617.1 Flammable or combustible liquids shall not be stored so as to limit use of exits, stairways or areas normally used for the egress of people.

1617.2 The storage of flammable or combustible liquids in closed containers shall comply with the following Subsections, except that the Fire Official may impose a quantity limitation or require greater protection where unusual hazard to life or property is involved, or he may authorize an increase of these amounts where the type of construction, fire protection provided or other factors substantially reduce the hazard.

1617.3 Dwellings and Apartment Houses Containing Not More Than Three Dwelling Units, and Accompanying Attached and Detached Garages. Storage in excess of 5 gallons shall be prohibited, not including fuel oil for oil-burning services.

1617.4 Assembly Occupancies, Apartment Houses Containing More Than Three Dwelling Units and Hotels. Storage in excess of 5 gallons shall be in containers stored in a storage cabinet or safety cans, or in an inside storage room not having an opening communicating with the portion of the building used by the public. Storage quantities shall be limited to that required for building and equipment operation or maintenance, not including fuel oil for oil-burning services.

1617.5 Office Occupancies. Storage shall be prohibited, except that which is required for the maintenance and operation of the building, and the operation of equipment. Such storage shall be kept in closed metal containers stored in a storage cabinet or in safety cans, or in an inside storage room not having a door that opens into that portion of the building used by the public.

1617.6 Educational Institutional Occupancies. Storage shall be limited to that required for maintenance, demonstration, treatment and laboratory work, not including fuel oil for oil-burning services. All liquids in laboratories and at other points of use shall meet the following storage provisions:

- (a) No glass or approved plastic container shall exceed the capacity requirements of Table 16A, and safety cans shall not exceed a 2-gallon capacity.
- (b) Not more than 10 gallons of flammable or combustible liquids not in safety cans, in addition to 25 gallons in safety cans, shall be stored outside of a storage cabinet or storage room.
- (c) Quantities of flammable and combustible liquids in excess of those set forth in this Subsection shall be stored in an inside storage room or storage cabinet.

1617.7 Mercantile Occupancies and Other Retail Stores. In rooms or areas accessible to the public, storage shall be limited to quantities needed for display and normal merchandising purposes, but shall not exceed 2 gallons per square foot of gross floor area. The gross floor area used for computing the maximum quantity permitted shall be considered as that portion of the store actually being used for merchandising flammable and combustible liquids.

1617.8 Where the aggregate quantity of additional stock exceeds 60 gallons of Class IA, 120 gallons of Class IB, 180 gallons of Class IC, 240 gallons of Class II or 500 gallons of combustible liquids, or any combination of flammable liquids exceeding 240 gallons, it shall be stored in a room or portion of the building that complies with the construction provisions for an inside storage room as provided in Subsection 1620.1.

1617.9 Containers in display areas shall not be stacked more than 3 feet or two containers high, whichever is greater, unless on fixed shelving or otherwise satisfactorily secured.

1617.10 Shelving shall be of stable construction, of sufficient depth and arrangement such that containers displayed thereon shall not be easily displaced.

1617.11 General Purpose Public Warehouses. Storage shall be in accordance with Table 16B and in buildings or in portions of such buildings cut off by approved fire walls. Materials creating no fire exposure hazard to the flammable or combustible liquids may be stored in the same area.

1617.12 Flammable and Combustible Liquid Warehouses or Storage Buildings. If a storage building is located 50 feet or less from a building or line of adjoining property that may be built upon, the exposing wall shall be a blank wall having a fire-resistance rating of at least 2 hours. In particular installations, the distance requirements between the storage building and other buildings may be altered at the discretion of the Fire Official after consideration of the height, size, and character of construction and occupancy of the exposed buildings.

At the discretion of the Fire Official, approved self-closing fire doors suitable for Class D openings may be installed in an approved manner on the otherwise blank walls.

SECTION 1618 DESIGN, CONSTRUCTION AND CAPACITY OF CONTAINERS

1618.1 Only approved containers shall be used. Metal containers meeting the requirements of and containing products authorized by Chapter I, Title 49, of the Code of Federal Regulations (DOT Regulations), shall be deemed to be acceptable.

1618.2 Each portable tank shall be provided with one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 psig, or 30 percent of the bursting pressure of the tank, whichever is greater. The total venting capacity shall be as specified in Subsection 1614.1. At least one pressure-actuated vent having a minimum capacity of 6,000 cubic feet of free air (14.7 psig and 60°F) shall be used. It shall be set to open at not less than 5 psig. If fusible vents are used, they shall be actuated by elements that operate at a temperature not exceeding 300°F.

1618.3 Flammable and combustible liquids packaged for sale or use shall conform to Table 16A.

SECTION 1619 STORAGE CABINETS

1619.1 Not more than 50 gallons of flammable or combustible liquids may be stored in a storage cabinet. No individual container may exceed a 5-gallon capacity.

1619.2 Metal cabinets shall be constructed in the following manner or built to equivalent requirements. The bottom, top, door and sides of cabinets shall be at least No. 18 gauge sheet iron and double walled with 1½-inch airspace. Joints shall be riveted, welded or made tight by some equally effective means. The door shall be provided with a three-point lock, and the door sill shall be raised at least 2 inches above the bottom of the cabinet. When deemed necessary by the Fire Official, cabinets shall be vented. The cabinet shall be conspicuously labeled in red lettering stating: "FLAMMABLE—KEEP FIRE AWAY."

1619.3 Storage of Flammable and Combustible Aerosol Products. Storage of flammable and combustible aerosol products in occupancies other than warehouses or mercantile occupancies, such as assembly, business, educational, industrial and institution occupancies, can be permitted in safe quantities that are used during regular business hours. Aerosol products not in use shall be secured in a safe manner, such as safety cabinets, chain-fenced area or areas, closet or closets, a separate room or rooms, or in a manner that is acceptable to the Fire Official.

1619.4 Areas found in an unsafe condition and not meeting the requirements specified in Subsection 1619.3 shall be required to store aerosol products in accordance with the Fire Official.

**TABLE 16A
MAXIMUM ALLOWABLE SIZE OF CONTAINERS AND PORTABLE TANKS**

FLAMMABLE LIQUIDS		Class IB	Class IC	COMBUSTIBLE LIQUIDS	
Container Type	Class IA			Class II	Class III
Glass or approved plastic	1 pint	1 quart	1 gallon	1 gallon	1 gallon
Metal (other than DOT Drums)	1 gallon	5 gallons	5 gallons	5 gallons	5 gallon
Safety Cans	2 gallons	5 gallons	5 gallons	5 gallons	5 gallons
Metal Drums (DOT Spec.)	60 gallons	60 gallons	60 gallons	60 gallons	60 gallons
Approved Portable Tanks	660 gallons	660 gallons	660 gallons	660 gallons	660 gallons

Container Exceptions:

1. Medicines, beverages, foodstuffs, cosmetics and other common consumer items, when packaged according to commonly accepted practices, shall be exempt from the requirements of Subsections 1618.1 and 1618.3.
2. Upon presentation of satisfactory proof that storage of flammable or combustible liquids in metal containers would affect their chemical purity or result in excessive corrosion of the container, the Fire Official may approve other containers.

TABLE 16B
INDOOR CONTAINER STORAGE

CLASS LIQUID	PROTECTED STORAGE MAXIMUM PER PILE ^a		UNPROTECTED STORAGE MAXIMUM PER PILE		
	Storage Level	Gallons	Height (feet)	Gallons	Height (feet)
IA	Ground & Upper Floors	2,750 (50)	3 (1)	660 (12)	3 (1)
	Basement	NP	NP		
IB	Ground & Upper Floors	5,550 (100)	6 (2)	1,375 (25)	3 (1)
	Basement	NP	NP		
IC	Ground & Upper Floors	16,550 (300)	9 3	4,125 (75)	9 (3)
	Basement	NP	NP		
II	Ground & Upper Floors	16,550 (300)	9 (3)	4,125 (75)	9 (3)
	Basement	NP	NP		
Combustible	Ground & Upper Floors	55,000 (1,000)	15 (5)	13,750 (250)	12 (4)
	Basement	8,250 (450)	9 (3)	NP	

NP = Not Permitted.

a. A sprinkler or equivalent fire protection system installed in accordance with the applicable NFPA standards. (Numbers in parentheses indicate corresponding number of 55-gallon drums.)

Notes:

1. When two or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile shall be the smallest of the two or more separate maximum gallonages.
2. Aisles shall be provided so that no container is more than 12 feet from an aisle. Main aisles shall be at least 4 feet wide.

SECTION 1620 DESIGN AND CONSTRUCTION OF INSIDE STORAGE

1620.1 Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use; construction shall comply with the requirements set forth in the *EPCOT Building Code*. Where an automatic sprinkler system is provided, the system shall be designed and installed in an approved manner for extra hazardous locations. Openings to other rooms or buildings shall be provided with noncombustible, liquid-tight raised sills and ramps at least 6 inches in height, or the floor in the room shall be at least 6 inches below surrounding floors. A permissible alternative to the sill or ramp is an open-grated trench inside of the room that drains to a safe location. The room shall be provided with approved self-closing fire doors. Where other portions of the building or other properties are exposed, windows shall be protected in an approved manner. Wood, at least 1-inch nominal thickness, may be used for shelving racks, dunnage, scuffboards, floor overlay and similar installations.

1620.2 Electrical wiring and equipment located in inside storage and handling rooms shall be approved for Class I, Division I, hazardous locations, in accordance with the *EPCOT Electrical Code*.

1620.3 Ventilation shall be designed to provide for a complete change of air within the room at least six times per hour. Ventilation shall be installed in accordance with the provisions of NFPA 91. It shall be controlled by a switch located outside of the door. The ventilation equipment and any lighting fixtures shall be operated by the same switch. A pilot light shall be installed adjacent to the switch if Class I flammable liquids are dispensed or used within the room.

1620.4 Heating shall be restricted to low-pressure steam or hot water, and to electric units approved for Class I, hazardous locations.

SECTION 1621 STORAGE IN INSIDE STORAGE ROOMS

1621.1 Storage in inside storage rooms shall comply with Table 16C.

1621.2 Inside storage rooms shall contain at least one aisle with a minimum width of 3 feet. Storage shall be no closer than 3 feet to ceilings or automatic sprinklers.

1621.3 Containers with more than a 30-gallon capacity shall not be stacked one upon the other. Containers with less than a 30-gallons capacity shall not be stacked more than 3 feet high.

1621.4 The dispensing of flammable or combustible liquids shall be by approved pumps taking suction through the top of the container or other approved methods.

SECTION 1622 OUTSIDE STORAGE

1622.1 Storage of more than 100 drums of Class I liquids shall be limited to groups of 100 drums, located at least 60 feet from the nearest main building or line of adjacent property that may be built upon, and each group shall be separated by at least 40 feet. Storage of more than 300 drums of Class II or III liquids shall be limited to groups of 300 drums located at least 50 feet from the nearest building or line of adjoining property that may be built upon, and each group shall be separated by at least 30 feet. These distances may be reduced 50 percent if sprinklers and drainage away from exposures are provided.

**TABLE 16C
STORAGE IN INSIDE STORAGE ROOMS**

AUTOMATIC EXTINGUISHING^a SYSTEM PROVIDED	FIRE RESISTANCE (See EPCOT Building Code)	MAXIMUM SIZE (square feet)	TOTAL ALLOWABLE QUANTITIES (gallons per square foot of floor area)
Yes	2 hours	500	10
No	2 hours	500	4
Yes	1 hour	150	5
No	1 hour	150	2

a. Fire protection system shall be sprinkler, water spray, carbon dioxide or other system approved by the Fire Official.

1622.2 The drum storage shall be located to prevent runoff or drainage toward other storage or buildings. The distance of not less than 15 feet shall be maintained between the liquid storage and any combustible material. Signs shall be posted prohibiting open flames and smoking. Fences or other control measures shall be provided, where necessary, to protect against tampering or trespassers.

1622.3 Storage of flammable or combustible liquids in closed containers in quantities of 5,000 gallons or less outside of buildings shall be located with respect to buildings or line of adjoining property, which may be built upon in accordance with Table 16D. Distances may be reduced with respect to warehouses and industrial buildings of noncombustible or fire-resistive construction, provided that the distances to property lines as set forth in Table 16D are maintained.

1622.4 A distance of not less than 15 feet shall be maintained between the liquid storage and any combustible material.

SECTION 1623 PORTABLE TANK STORAGE

1623.1 Portable tank storage shall not exceed the limitations set forth in Table 16E.

SECTION 1624 EMPTY CONTAINERS

1624.1 Tanks and containers, when emptied, shall have the covers or plugs immediately replaced in openings.

SECTION 1625 FIRE CONTROL

1625.1 Suitable fire control devices, such as a small hose or approved portable fire appliances, shall be available at locations where flammable or combustible liquids are stored.

1625.2 Where sprinklers are required, they shall be installed in an approved manner.

1625.3 Open flames, smoking and other sources of ignition shall not be permitted in flammable or combustible liquid storage rooms.

1625.4 Materials, which will react with water or other liquids to produce a hazard, shall not be stored in the same room with flammable or combustible liquids.

SECTION 1626 INDUSTRIAL ESTABLISHMENTS

1626.1 Manner of Storage. Flammable or combustible liquids shall be stored in tanks, closed containers or approved safety cans.

1626.2 Flammable or combustible liquids stored in tanks, drums or other closed containers shall conform to the applicable requirements of this Chapter.

SECTION 1627 USE

1627.1 Flammable or combustible liquids in quantities requiring a permit shall be used in buildings, portions of buildings, or rooms designed and constructed in accordance with the requirements of Subsection 1620.1.

SECTION 1628 DISPENSING

1628.1 Class I flammable liquids shall be dispensed only in an inside storage and handling room, from approved safety cans, or original containers in rooms approved for such use.

1628.2 Flammable and combustible liquids shall be dispensed by approved pumps taking suction through the top of the container. Alternative methods may be approved by the Fire Official.

1628.3 Class I flammable liquids shall not be dispensed within a room or building that contain sources of ignition. Dispensing devices shall be provided with iron or steel valves where compatible with the liquid handled. There shall be, in addition to the outlet valve, a secondary control device or valve outside of the immediate area, by which the flow may be stopped in the event of fire or other accident at the outlet. Outlet valves, where practicable, shall be of the self-closing type.

1628.4 Class I flammable liquids shall not be run into containers unless the nozzle and container are electrically interconnected. Where the metallic floor plate on which the container stands while filling is electrically connected to the fill stem, or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this Section shall be deemed to have been complied with.

1628.5 Exit facilities shall be provided in accordance in Chapter 11.

**TABLE 16D
STORAGE OF FLAMMABLE OR COMBUSTIBLE LIQUIDS IN CLOSED CONTAINERS OUTSIDE OF BUILDINGS**

QUANTITY (gallons)	DISTANCE FROM BUILDINGS OR LINE OF ADJOINING PROPERTY WHICH MAY BE BUILT UPON (feet)
Class I 1 to 150 (3 drums) 150 to 500 (3 to 10 drums) 500 to 5,000 (10 to 100 drums)	15 25 50
Class II or III 1 to 150 (3 drums) 150 to 500 (3 to 10 drums) 500 to 5,000 (10 to 100 drums)	5 10 30

Note: In occupancies where the public is invited or permitted, the listed distances shall be doubled.

**TABLE 16E
OUTDOOR PORTABLE TANK STORAGE**

CLASS	MAXIMUM PER PILE (gallons)	DISTANCE BETWEEN PILES (feet)	DISTANCE TO PROPERTY LINE THAT CAN BE BUILT UPON (feet)	DISTANCE TO PUBLIC WAY STREET, ALLEY (feet)
1	2	3	4	5
IA	2,200	5	20	10
IB	4,400	5	20	10
IC	8,800	5	20	10
II	17,600	5	10	5
Combustible	44,000	5	10	5

Notes:

- When two or more classes of materials are stored in a single pile, the maximum gallonage in that pile shall be the smallest of the two or more separate gallonages.
- Within 200 feet of each portable tank, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.
- The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 shall be doubled.
- When the total quantity stored does not exceed 50 percent of the maximum per pile, the distances in Columns 4 and 5 may be reduced 50 percent, but not less than 3 feet.

SECTION 1629 VENTILATION

1629.1 Buildings or other enclosures in which flammable or combustible liquids are stored in open systems and processes shall be provided with ventilation sufficient at all times to prevent the accumulation of flammable vapors.

1629.2 Ventilating systems shall be designed to take into account the relatively high specific gravity of the vapors. Openings to the outside for natural ventilation shall be 6 inches above floor level. Mechanical systems for removing flammable and combustible liquid vapors shall be designed and installed in accordance with the provisions of NFPA 91.

SECTION 1630 SOURCES OF IGNITION

1630.1 Open flames, heating devices and processes employing temperatures capable of igniting vapors of the flammable liquids used, shall be prohibited in buildings, rooms or other confined spaces in which Class I flammable liquids are used in the open or in which Class II or III liquids are used for the purpose of saturating, coating or otherwise treating goods or materials. Electrical devices shall be of a type approved for

such locations and shall comply with the applicable provisions of the *EPCOT Electrical Code*. Smoking shall be prohibited and signs with the wording “NO SMOKING” shall be displayed.

SECTION 1631 FIRE CONTROL AND MAINTENANCE

1631.1 Fire protection appliances shall be provided where flammable or combustible liquids are used or dispensed. The number and type of appliances shall be as provided in NFPA 10.

1631.2 Access for fire equipment shall be provided by unobstructed aisles.

1631.3 In buildings or other confined space in which flammable or combustible liquids are stored, no combustible waste materials shall be allowed to accumulate.

1631.4 Flammable or combustible liquids shall not be dumped on the ground, into sewers, drainage ditches or storm drains, but shall be stored in tanks or tight drums outside of any building until removed from the premises. Leaking containers shall be removed or repaired.

SECTION 1632 BULK PLANTS

1632.1 Location. No new bulk plants shall be constructed within the limits of the District.

SECTION 1633 STORAGE

1633.1 Class I liquids shall be stored in closed containers; in storage tanks above ground, outside of buildings; or underground in accordance with tank storage.

1633.2 Class II and III liquids shall be stored in containers or tanks within buildings; or above ground, outside of buildings; or underground in accordance with tank storage.

1633.3 Containers of flammable or combustible liquids, when piled one upon the other, shall be separated by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile shall be consistent with the stability and strength of the containers.

SECTION 1634 VENTILATION

1634.1 Ventilation shall be provided for all rooms, buildings or enclosures in which Class I flammable liquids are pumped or dispensed. Design of ventilation systems shall take into account the relatively high specific gravity of the vapors. Ventilation may be provided by adequate openings in outside walls at floor level unobstructed, except by louvers or coarse screens. Where natural ventilation is impracticable, mechanical ventilation shall be provided.

1634.2 Buildings shall be constructed so that rooms in which flammable or combustible liquids are handled or stored comply with the requirements of the zone or area in which they are located. Class I flammable liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

1634.3 Rooms storing flammable or combustible liquids, or in which flammable or combustible liquids are handled by pumps, shall have exit facilities in accordance with Chapter 11 and the *EPCOT Building Code*.

1634.4 Rooms in which Class I flammable liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam or hot water. Rooms containing heating appliances involving sources of ignition shall be located and arranged to prevent the entry of flammable vapors.

SECTION 1635 LOADING AND UNLOADING FACILITIES

1635.1 Tank vehicle and tank car loading or unloading facilities shall be separated from tanks, warehouses or other plant buildings, and the nearest line of property that may be built upon by a clear distance of not less than 25 feet, measured from the nearest position of any fill stem. Buildings for pumps or for shelters of loading personnel may be part of the

loading rack. Noncombustible materials shall be used for the construction of loading racks.

1635.2 Static Protection. Loading racks shall be equipped with protection against static sparks during truck filling. Protection shall consist of a bare metallic bond wire permanently electrically connected to the fill stem or some part of the fill-stem piping. The free end of such wire shall be provided with a clamp or similar device for convenient attachment to some metallic part of the cargo tank. The bond-wire connection shall be made prior to opening the dome cover. It shall be maintained in place during the entire filling operation and the dome covers shall be securely closed before the bond wire is disconnected.

1635.3 Signs. Legible signs with the words "NO SMOKING" shall be maintained at the entrance gate or gates of each bulk plant and near each loading rack.

1635.4 There shall be installed on each loading rack riser pipe between the ground and the outlet, at least two valves, one being of the lever-operated, self-closing type, which may be readily operated from the loading rack platform or top of the vehicle being filled. It shall be unlawful for any person to tie or lock such self-closing valve in the open position.

1635.5 Tank Car Racks. Class I flammable liquids shall not be discharged from or loaded into tank cars unless protection against stray currents has been provided and is used. Protection shall be designed and installed in accordance with NFPA 77.

1635.6 Container Filling Facilities. Class I flammable liquids shall not be run into containers unless the nozzle and container are electrically interconnected. Where the metallic floor plate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during the filling operations by means of a bond wire, the provisions of this Section shall be deemed to have been complied with.

1635.7 Electrical equipment shall be designed and installed in accordance with the *EPCOT Electrical Code*. Wiring and electrical equipment shall be installed so as not to create an ignition hazard.

1635.8 Flammable or combustible liquids shall not be handled, drawn or dispensed where flammable vapors may reach a source of ignition. Smoking shall be prohibited, except in designated localities. "NO SMOKING" signs shall be posted where hazard from flammable vapors is normally present.

1635.9 Approved portable fire extinguishers shall be provided for the extinguishment of fires as designated in NFPA 10. An extinguisher shall be provided and maintained, having a minimum classification of 20B at the loading rack. Small hose or portable fire extinguishers, shall be available to locations where fires are likely to occur. Additional fire-control equipment may be required where an unusual exposure hazard exists.

SECTION 1636 SERVICE STATIONS

1636.1 Location. Apparatus, dispensing Class I flammable liquids into the fuel tanks of motor vehicles of the public,

shall not be located at a bulk plant unless separated by a fence or similar barrier from the area in which bulk operations are conducted.

1636.2 Class I liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

1636.3 Class I liquids shall be stored in approved closed containers, tanks located underground, or in special enclosures as described in this Section. Class II and III liquids shall be stored in containers, tanks located underground, or in special enclosures as described in this Section. Above-ground tanks located in adjoining bulk plants may be connected by piping to service station underground tanks if, in addition to valves at above-ground tanks, a valve is also installed within the control of service station personnel.

1636.4 The provision of this Section shall not prohibit the temporary use of movable tanks in conjunction with the dispensing of flammable or combustible liquids into the fuel tanks of motor vehicles or other motorized equipment on premises not normally accessible to the public. Such installation shall only be made with the approval of the Fire Official.

1636.5 When installation of tanks in accordance with Subsection 1611.1 is impractical because of property of building limitations, tanks for flammable or combustible liquids may be installed in buildings if enclosed and if enclosure is liquid and vapor tight without backfill. Sides, top and bottom of the enclosure shall be of reinforced concrete at least 6 inches thick, with openings for inspection through the top only. Tank connections shall be so piped or closed that neither vapors nor liquid can escape into the enclosed space. Means shall be provided whereby portable equipment may be employed to discharge to the outside any vapors that might accumulate should leakage occur.

1636.6 Flammable or combustible liquids may be stored in approved containers inside service station buildings. Class I liquids may be stored within service station buildings in approved 1-gallon closed containers of aggregate capacity not exceeding 50 gallons. Class II and III liquids may be stored within service station buildings in approved containers of aggregate capacity not exceeding 120 gallons.

SECTION 1637 DISPENSING

1637.1 No Class I liquids shall be dispensed or transferred within a service station building, except as provided in this Section. Class II and III liquids may be dispensed in lubrication or service rooms of a service station building provided the heating equipment complies with this Chapter. Delivery of any flammable or combustible liquid shall be made only into approved portable containers. This dispensing of flammable liquids into the fuel tank of a vehicle or into a container shall be under the supervision of a qualified attendant.

1637.2 Design. Class I liquids shall be transferred from tanks by means of fixed pumps so designed and equipped as to allow control of the flow and to prevent leakage or accidental

discharge. Clearly identified and easily accessible switches or circuit breakers shall be provided at a location remote from the dispensing devices whereby the source of power may be readily disconnected in the event of fire or other accident. Dispensing devices for flammable or combustible liquids shall be of approved type. Flammable and combustible liquids shall be dispensed by approved pumps taking suction through the top of the container. Flammable and combustible liquids shall not be dispensed by a device that operates through pressure within a storage tank or container, unless the tank or container has been approved as a pressure vessel for the use to which it is subjected. In no case shall air or oxygen pressure be used for dispensing flammable and combustible liquids. This Section does not prohibit use permitted by Subsection 1638.1.

1637.3 Supervision. Every service station open to the public shall have an attendant or supervisor on duty whenever the station is open for business.

1637.4 If the dispensing of Class I liquids at a service station available and open to the public is to be done by a person other than the service station attendant, the nozzle shall be a listed automatic-closing type.

1637.5 Location. Dispensing devices at automobile service stations shall be located a minimum distance of 10 feet from a property line and so located that all parts of a vehicle being serviced will be on private property.

1637.6 Dispensing devices at automobile service stations shall be located not less than 10 feet from any building that is not of noncombustible or fire-resistive construction. Such dispensing devices shall also be located so the nozzle, when the hose is fully extended, shall not reach within 5 feet of any building opening.

1637.7 Inside Use. Where an outside location is impractical, dispensing devices approved for inside use may be installed inside a garage or similar building, storing, parking, servicing or repairing automotive equipment upon the approval of the Fire Official. Such building shall comply with the *EPCOT Building Code* for such use. The dispensing device shall be located in an area of fire-resistive construction, well away from vehicle storage and repair areas and well ventilated. It shall be protected against physical damage by vehicles by mounting on a concrete island or protected against collision by approved means. A remote emergency shutoff for electric power to the dispensing unit and the pump shall be provided at an accessible location and shall be clearly labeled as to its intended purpose. The dispensing area shall be provided with an approved mechanical or gravity ventilation system. When dispensing units are located below grade, only approved mechanical ventilation shall be used and the entire dispensing area shall be protected by an approved automatic sprinkler system. Ventilating systems shall be electrically interlocked with Class I dispensing units so that the dispensing units cannot be operated unless the ventilating fan motors are energized.

1637.8 Controls for Self-Service and Full-Service Stations. Any pump motor circuit shall be energized by a switch located on each dispenser connected to it, which shall be operated by removal or replacement of the nozzle in its bracket.

1637.9 A clearly labeled, manually operated pump master switch shall be provided in an approved location, within 75 feet of, but not nearer than 15 feet to, any dispenser. Where such master switch is not visible from all dispensers, the location thereof shall be indicated by approved signs.

1637.10 Signs identifying the pump master switch shall be labeled: "EMERGENCY PUMP SHUTOFF."

1637.11 The master switch on all individual pump circuit switches shall be set in the "OFF" position before closing the service station for business at any time.

1637.12 Pressure systems shall incorporate with each turbine an indicator light illuminated when the turbine is running. Said light shall be visible from the pump island, and suitably identified as to the system served.

1637.13 Special Type. Approved special dispensing systems, such as, but not limited to, coin-operated and remote-preset types, are permitted at service stations, provided there is at least one qualified attendant on duty while the station is open to the public. The attendant's primary function shall be to supervise, observe and control the dispensing of Class I liquids while said liquids are being dispensed. It shall be the responsibility of the attendant to prevent the dispensing of Class I liquids into portable containers not in compliance with this Chapter, control sources of ignition, and to immediately handle accidental spills and fire extinguishers if needed.

1637.14 The attendant or supervisor on duty shall be capable of performing the functions and assuming the responsibilities covered in this Subsection.

1637.15 Emergency controls shall be installed at a location acceptable to the Fire Official, but controls shall be not more than 100 feet from dispensers.

1637.16 Instructions for the operation of dispensers shall be conspicuously posted.

SECTION 1638 PRESSURE DELIVERY SERVICE STATION

1638.1 Approval of Equipment and Installation. Tanks, pits, pumps, electrical equipment, piping systems, dispensers, hose, nozzles and other integral parts of pressure delivery systems shall be approved by the Fire Official.

1638.2 Pumps installed above grade outside of buildings shall be located not less than 10 feet from lines of adjoining property, which may be built upon or from a property line that abuts upon a public right-of-way or thoroughfare. Pumps shall be located not less than 10 feet from buildings that are not of noncombustible or at least 1-hour fire-resistive construction in accordance with the *EPCOT Building Code*, nor less than 5 feet from any building opening.

1638.3 Pumps installed above grade shall be mounted on a concrete foundation and shall be protected against damage.

1638.4 Submersible or subsurface pumps shall be installed in accordance with approved standards.

1638.5 Pits for subsurface pumps or piping manifolds of submersible pumps shall withstand the external forces to which they may be subjected without damage to the pump, tank or piping. The pit shall be no larger than necessary for the inspection and maintenance, and shall be provided with a tight-fitting cover.

1638.6 Piping, valves and fittings shall be designed for the working pressures and structural stresses to which they may be subjected. They shall be galvanized or otherwise protected against external corrosion with an approved material. All threaded joints or connections shall be made up tight with the use of an approved pipe-joint-sealing compound.

1638.7 A check or manual valve shall be provided in the discharge dispensing supply line from the pump with a union between the valve and the same pump discharge.

1638.8 An approved impact valve, incorporating a fusible link, designed to close automatically in the event of severe impact or fire exposure, shall be installed so that the shear section of the impact valve is mounted flush with the surface upon which the dispenser is mounted. Such valve shall be rigidly mounted and connected in an approved manner.

1638.9 After completion of the installation, the system shall be tested. The test shall be observed by the Fire Official.

SECTION 1639 ELECTRICAL EQUIPMENT

1639.1 This Section shall apply to areas where Class I liquids are stored or handled.

1639.2 All installation of electric wiring and equipment shall be reasonably safe to persons and property. For Class I liquids where electrical wiring and equipment are installed, evidence that such wiring and equipment as set forth in Table 16F will be required. Such wiring and equipment shall be installed in accordance with the *EPCOT Electrical Code*.

1639.3 In Table 16F, a classified area shall not extend beyond the unpierced wall, roof or other solid partition.

1639.4 For area classifications not covered in Subsection 1639.2 and not listed in Table 16F, the Fire Official shall have the authority to classify the extent of the hazardous area.

SECTION 1640 HEATING EQUIPMENT

1640.1 Electrical heating equipment shall conform to Subsection 1639.1.

1640.2 Heating equipment, other than electrical, shall conform to the following:

- (a) In rooms where Class I, II or III liquids are dispensed, heating equipment shall be installed in accordance with the *EPCOT Building Code*.
- (b) Rooms adjacent to dispensing rooms, with openings between, shall be treated as if used for dispensing.

**TABLE 16F
ELECTRICAL EQUIPMENT FOR HAZARDOUS AREAS—SERVICE STATIONS**

LOCATION	NEC CLASS 1, GROUP D DIVISION	EXTENT OF CLASSIFIED AREA
Lubrication or Service— Room	1	Entire area within any pit.
	2	Area up to 18 inches above floor or grade level within entire lubrication room.
Lubrication or Service— Room Dispenser for Class I Liquids	2	Within 3 feet of any fill or dispensing room, extending in all directions.
Sales Storage and Rest Rooms	Ordinary	If there is any opening to these rooms within the extent of a Division I area, the entire room shall be classified as Division 1.

NEC = *The National Electrical Code*

SECTION 1641 DRAINAGE AND WASTE DISPOSAL

1641.1 Provision shall be made in the area where Class I liquids are dispensed to prevent spilled liquids from flowing into the interior of service station buildings. Such provisions may be by grading driveways, raising door sills or other equally effective means. Crankcase drainings and flammable or combustible liquids shall not be dumped into sewers, but shall be stored in tanks or drums outside of any building until removed from the premises.

SECTION 1642 FIRE CONTROL

1642.1 There shall be no smoking or open flames in the areas used for fueling, servicing internal combustion engines, or receiving or dispensing of flammable or combustible liquids. A conspicuous sign prohibiting smoking shall be posted within sight of each customer being served. The motors of all vehicles being fueled shall be shut off during the fueling operation.

1642.2 Extinguishers of a minimum classification of 5BC shall be provided and so located that no pump, dispenser or fill-pipe opening shall be a greater distance than 75 feet from such extinguisher.

SECTION 1643 MARINE SERVICE STATIONS

1643.1 The general construction of marine service stations and the storage and handling of flammable or combustible liquids at such locations shall, except as otherwise provided in this Section, be in accordance with the provisions of this Chapter.

1643.2 Marine service stations shall not be located at a bulk plant unless separated by a fence or similar barrier from the area in which bulk operations are conducted.

1643.3 Dispensing. Wharves, piers, floats or marine service stations shall be used exclusively for the dispensing or transfer of petroleum products to or from marine crafts, except that

transfer of essential ship stores is permitted. Dispensing units shall, in all cases, be at least 20 feet away from any activity not associated with the handling of fuel.

1643.4 Tanks and pumps, other than those integral with approved dispensing devices, supplying flammable or combustible liquids at marine service stations, shall be located only on shore or, when approved, on piers of solid-fill type. Approved dispensing devices may be located on shore, piers of solid-fill type, open piers, wharves or floating docks.

1643.5 Dispensing of flammable or combustible liquids, or LP gases, shall be under the direct control of a competent person.

1643.6 Dispensing of flammable or combustible liquids into the fuel tanks of marine crafts shall be by means of an approved-type hose and nozzle.

1643.7 Fueling of floating marine crafts at other than a marine service station is prohibited.

1643.8 The dispensing area shall be located from other structures so as to provide room for safe ingress and egress of crafts to be fueled. Dispensing units shall, in all cases, be at least 20 feet from any activity involving fixed sources of ignition.

1643.9 Storage. Flammable and combustible liquids may be stored in approved portable containers within marine service station buildings. Storage of Class I liquids in approved closed portable containers shall not exceed a 10-gallon aggregate capacity, except within a room or building approved for such storage, or that meets the requirements of Subsection 1620.1. Class II and III liquids may be stored and dispensed inside marine service station buildings from approved containers of not more than a 120-gallon capacity, provided the heating equipment complies with Subsection 1640.1.

1643.10 Tanks, valves, fittings and piping for flammable or combustible liquids and LP gases shall be approved for such use and fully protected from external corrosion.

1643.11 There shall be no connection between any above-ground tank and any underground tank, except that above-ground tanks located in an adjoining bulk plant may be connected by piping to marine service station underground tanks

if, in addition to valves at the above-ground tanks, a valve is also installed within control of marine service station personnel.

1643.12 Pipelines at marine service stations where attached to piers, wharves or other structures shall be fully protected against physical damage and excessive stresses.

1643.13 A valve, whereby supply from shore may be shut off, shall be provided in each product line at or near the approach to the pier, wharf or other structure. An approved quick-throw valve shall be provided above each flexible connection to stop flow in the event of rupture of such flexible connections.

1643.14 All commodity piping at marine service stations shall be welded or welded flange steel construction, except that screwed piping 2 inches or less in diameter shall be permitted.

1643.15 Piping handling Class I liquids shall be grounded to control stray electrical current.

1643.16 Testing of piping systems shall be in accordance with Subsection 1614.1.

1643.17 Fire Control. All marine facilities shall be maintained in a neat and orderly manner, and no accumulation of rubbish or waste oils in excessive amounts shall be permitted.

1643.18 Electrical equipment installed and used shall be in accordance with the *EPCOT Electrical Code* as it applies to wet, damp and hazardous locations. Clearly identified emergency switches, readily accessible in case of fire or physical damage at any dispensing unit, shall be provided on each main float and at the shore approach to the pier, wharf or floating dock, so interlocked as to shut off power to all pump motors from any individual location and reset only from the master switch. Each switch shall be identified by an approved sign stating: "EMERGENCY PUMP SHUTOFF." The master switch shall be set in the "OFF" position before closing the marine service station at any time. Pressure system shall be incorporated with each turbine an indicator light that shall be illuminated when the turbine is running. Such light shall be visible from the shore approach and from the dispenser location and suitably identify the system served.

1643.19 Smoking or open flames shall be prohibited within 50 feet of fueling operations. "NO SMOKING" signs shall be posted.

1643.20 There shall be prominently displayed at the face of each wharf, pier or float at such elevation as to be clearly visible from the decks of marine crafts being fueled, a sign or signs with letters not less than 3 inches in height on a background of contrasting color bearing the following or equivalent wording:

WARNING
NO SMOKING—STOP ENGINE WHILE FUELING
SHUT OFF ELECTRICITY
DO NOT START ENGINE UNTIL AFTER
BELOW-DECK SPACES ARE VENTILATED

1643.21 Equipment shall be available for calling the Fire Department. Such equipment may consist of a proprietary

alarm system, a fire department alarm box or telephone not requiring a coin to operate; and shall be within 100 feet of marine service station premises.

1643.22 Fire extinguishers each having a 20BC rating shall be provided as follows: One on each float and one on the pier or wharf within 25 feet of the head of the gangway to the float, except that where the office is within 25 feet of the gangway or is on the float and an extinguisher is provided thereon; the extinguisher at the head of the gangway need not be provided. Other fire controls may be required by the Fire Official.

SECTION 1644 PROCESSING PLANTS

1644.1 Storage. Flammable or combustible liquids shall be stored in tanks, closed containers or approved safety cans.

1644.2 Flammable or combustible liquids stored in tanks, drums or other closed containers shall conform to the applicable requirements of this Chapter.

SECTION 1645 BLENDING AND MIXING ROOMS

1645.1 Mixing or blending rooms or buildings shall meet the design requirements of Subsection 1620.1.

1645.2 Vessels used for mixing or blending of Class I flammable liquids shall be provided with self-closing, tight-fitting, noncombustible lids. Where such devices are impracticable, approved automatic or manually controlled fire-extinguishing devices shall be provided.

1645.3 Open flames and other sources of ignition shall not be used where flammable or combustible liquids are mixed or blended in open containers.

1645.4 Vessels shall be electrically connected by bond wires, piping or similar means, where differences of potential could otherwise be created by accumulation of static-electrical charges.

SECTION 1646 SOURCES OF IGNITION

1646.1 Adequate precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to, open flames; lightning; smoke; cutting and welding; hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

1646.2 Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floor plate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this Section shall be deemed to have been complied with. Artificial lighting shall be by electricity only. Electrical devices shall be of a type approved for such locations and shall be installed in accordance with the *EPCOT Electrical Code*.

1646.3 Housekeeping. Maintenance and operating practices shall be in accordance with established procedures, which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.

1646.4 Adequate aisles shall be maintained for unobstructed movement of personnel, and so that fire protection equipment can be brought to bear on any part of flammable or combustible liquid storage, unit physical operation or any part of the processing equipment.

1646.5 Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.

1646.6 Ground area around buildings and unit operating areas shall be kept free of weeds, trash or other unnecessary combustible materials.

1646.7 Fire Control. Where flammable or combustible liquids are stored or used in open vessels, or are dispensed within buildings or other enclosures, fire-control appliances shall be provided. The number and type of appliances shall be in accordance with the provisions of NFPA 10.

SECTION 1647 REFINERIES, CHEMICAL PLANTS AND DISTILLERIES

1647.1 Locations. No permit shall be issued for the construction or operation of a chemical plant, distillery, refinery or plant storing or handling crude petroleum until approval has been given for the operation with respect to topography, nearness to places of assembly, residential or mercantile occupancy, and adequacy of water supply for fire control.

1647.2 Storage. Flammable or combustible liquids shall be stored in tanks above ground or underground in accordance with this Chapter.

1647.3 Tanks for the storage of flammable or combustible liquids in tank farms and in locations other than process areas shall be located in accordance with this Chapter.

1647.4 Fire pressure vessels shall be constructed in accordance with the Code for Fired Pressure Vessels, Section I of ASME's *Boiler and Pressure Vessel Code*.

1647.5 Unfired pressure vessels shall be constructed in accordance with Section VIII of ASME's *Code for Unfired Pressure Vessels*.

1647.6 Location of Process Units. Process units shall be located so that they are accessible from at least one side for the purpose of fire control. Where topographical conditions are such that flammable or combustible liquids may flow from a processing area so as to constitute a fire hazard to other property, provision shall be made to divert or impound the flow by curbs, drains or other suitable means.

1647.7 Fire Control. Approved portable fire appliances, such as fire extinguishers or permanently connected small hose lines, shall be provided in quantities and types.

1647.8 Water shall be available in volume and pressure sufficient to supply water hose streams and other systems as the need is indicated by the special hazard. Hose and hydrants

shall be available in sufficient number to comply with such need. Fire-control chemicals and suitable application devices shall be provided in accordance with the provisions of Subsection 1610.1.

1647.9 Smoking is prohibited, except in approved, posted areas.

1647.10 No person shall accumulate or allow the dangerous accumulation of grass, weeds, waste combustible materials, or waste flammable or combustible liquids on the premises of a refinery, except in a sump, tank or receptacle approved for this purpose.

SECTION 1648 TANK VEHICLES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS

1648.1 Permit Required. No person shall engage in the business of delivering flammable or combustible liquids from tank vehicles without a permit.

SECTION 1649 TANK VEHICLE DESIGN

1649.1 Cargo tanks used for transporting flammable and combustible liquids at temperatures equal to or above their boiling points shall be constructed, equipped and maintained in accordance with NFPA 385.

1649.2 The material used in the construction of the cargo tanks shall be compatible with the chemical characteristics of the flammable or combustible liquid to be transported.

1649.3 Any tank vehicle designed or used for transporting materials at liquid temperatures above ambient temperature shall have a red warning sign permanently attached to the vehicle containing at least the following:

(a) "Maximum allowable cargo temperature is...°F."

(b) This maximum allowable cargo temperature shall be specified by the manufacturer of the vehicle.

1649.4 Tires. All tank motor vehicles shall be equipped with rubber tires on all wheels.

SECTION 1650 STATIC PROTECTION

1650.1 Cargo tanks and vehicle chassis shall be electrically bonded.

1650.2 Provisions shall be made in the tank structure of the vehicle for the bonding of the vehicle to the fill pipe during truck loading operations.

SECTION 1651 PROTECTION AGAINST COLLISION OR OVERTURN

1651.1 Draw-off valves or faucets projecting beyond the frame at the rear of a tank vehicle shall be adequately protected against collision by bumpers or similar means.

1651.2 On tank vehicles constructed hereafter, all closures for filling openings shall be protected from damage in the event

of overturning of the tank vehicle by being enclosed within the body of the tank, or a dome attached thereto, or by the use of suitable metal guards securely attached to the tank or the frame of the tank vehicle.

1651.3 Lighting. No lighting device other than electric lights shall be used on tank vehicles. Lighting circuits shall have suitable overcurrent protection (fuses or automatic circuit breakers). The wiring shall have sufficient carrying capacity and mechanical strength, and shall be secured, insulated and protected against physical damage.

SECTION 1652 FULL TRAILERS AND SEMI-TRAILERS

1652.1 Trailers shall be firmly and securely attached to the vehicle drawing them, in a manner conforming to accepted engineering practice.

1652.2 Each full trailer and semi-trailer shall be equipped with reliable brakes on all wheels, and adequate provisions shall be made for their efficient operation from the driver's seat of the vehicle drawing the trailer or semi-trailer.

1652.3 Trailer connections shall be such as to prevent the towed vehicle from whipping or swerving from side to side dangerously or unreasonably and shall cause the trailer to follow substantially in the path of the towing vehicle.

SECTION 1653 MARKING

1653.1 Every tank vehicle used for the transportation of flammable liquid, regardless of the quantity being transported, or whether loaded or empty, shall be conspicuously and legibly marked on each side and the rear thereof, in letters at least 3 inches high, on a background of sharply contrasting color, optionally as follows:

- (a) With a sign of lettering on the motor vehicle with the word "Flammable."
- (b) With the common name of the flammable liquid being transported.

SECTION 1654 FIRE CONTROL

1654.1 Each tank vehicle shall be provided with at least one portable fire extinguisher having at least a 10BC rating or, when more than one is provided, each extinguisher shall have at least a 5BC rating.

1654.2 Fire extinguishers shall be kept in good operating condition at all times, and they shall be located in an accessible place on each tank vehicle.

SECTION 1655 OPERATION OF TANK VEHICLES

1655.1 Drivers shall be thoroughly instructed in the proper method of operating tank vehicles.

1655.2 Tank vehicles shall not be operated unless they are in proper repair; devoid of the accumulation of grease, oil or other flammables; and free of leaks.

1655.3 Dome covers shall be closed and latched while the tank vehicle is in transit.

1655.4 No tank vehicle shall be operated with a cargo temperature above the maximum allowable cargo temperature specified on the warning sign required by this Chapter.

1655.5 No material shall be loaded into or transported in a tank vehicle at a temperature above its ignition temperature, unless properly safeguarded in an approved manner.

1655.6 Flammable and combustible liquids, which are loaded at or above their boiling points or may reach their boiling point temperature during transit, shall be loaded only into cargo tanks constructed in accordance with this Section.

1655.7 Flammable and combustible liquids shall be loaded only into cargo tanks constructed of material that is chemically compatible with the chemical characteristics of the liquid. The flammable and combustible liquid being loaded shall also be compatible with the liquid hauled on the previous load unless the cargo tank has been cleaned.

1655.8 No tank vehicle, or any compartment thereof, which has been utilized for Class I liquid, shall be loaded with Class II or III liquid until such tank or compartment and all piping, pumps, meters and hose connected thereto have been completely drained. A tank, compartment, piping, pump, meter or hose that does not drain completely shall be flushed at the loading point with a quantity of Class II or III liquid equal to twice the capacity of piping, pump, meter and hose to clear any residue of Class I liquid from the system.

SECTION 1656 FILLING AND DISCHARGING TANK VEHICLES

1656.1 The driver operator or attendant of any tank vehicle shall not remain in the vehicle, but shall not leave the vehicle while it is being filled or discharged. Delivery hose, when attached to a tank vehicle shall be considered to be a part of the tank vehicle.

1656.2 Motors of tank trucks or tractors shall be shut down during making and breaking hose connections. If loading or unloading is done without the use of a power pump, the tank truck or tractor motor shall be shut down throughout such operations.

1656.3 The cargo tank shall be bonded to the fill stem or some part of the rack structure electrically interconnected with the fill-stem piping, except tank vehicles handling asphalt, tank vehicles loading any flammable liquids through bottom connections, and tank vehicles used exclusively for transporting Class II or III liquids when loaded at locations where no Class I liquids are handled.

1656.4 The bond-wire connection shall be made prior to opening the dome covers. It shall be maintained in place during the entire filling operation and the dome covers shall be securely closed before the bond wire is disconnected from the cargo tank.

1656.5 No external bond-wire connection, nor bond wire integral with a hose, is needed for the unloading of flammable or combustible liquids into underground tanks.

1656.6 No cargo tank or compartment thereof used for the transportation of any flammable or combustible liquid or asphalt shall be loaded liquid full. Sufficient space (outage) shall be left vacant in every case to prevent leakage from or distortion of such tank or compartment by expansion of the contents due to rise in temperature in transit and in no case less than 1 percent.

1656.7 Simultaneous delivery to underground tanks from two or more hoses shall be made by means of tight connections between the hose and the fill pipe.

1656.8 Cargo tanks shall be free of all water before they are loaded with hot asphalt.

1656.9 No driver, operator or attendant of any tank vehicle shall fill a flammable or combustible liquid tank unless the tank to transport vapor recovery vent is properly connected to both the transport and tank system.

SECTION 1657 IGNITION SOURCES

1657.1 Smoking by tank vehicle drivers, helpers, repairmen or other personnel is prohibited while they are driving, making deliveries, filling or making any repairs to tank vehicles.

1657.2 Open flames shall not be used near manholes or vents.

SECTION 1658 PARKING AND GARAGING

1658.1 Except in an emergency, no tank vehicle shall be left unattended on any street, highway, avenue or alley, provided that this shall not prevent a driver from the necessary absence from the truck in connection with the delivery of his load, except that during actual discharge of the liquid some responsible person shall be present at the vehicle, nor shall it prevent stops for meals during the day or night if the street is well lighted at the point of parking.

1658.2 Tank vehicles containing flammable or combustible liquids shall not be parked out of doors at any point for longer than 1 hour, except off the street, and at least 25 feet from any buildings used for assembly, institutional or residential occupancy.

1658.3 Tank vehicles shall not be parked or garaged in any buildings other than those specifically approved for such use by the Fire Official.

SECTION 1659 TRANSPORTATION PIPELINES

1659.1 Permit Required. No pipeline used for the transportation of flammable or combustible liquids shall be installed or operated without a permit.

1659.2 No excavation or below-grade work shall be performed within 10 feet of any pipeline used for the transportation of flammable or combustible liquids without a permit.

SECTION 1660 CRUDE OIL PRODUCTION

1660.1 Permit Required. No person shall drill, own, operate or maintain an oil well without a permit. Each oil well permit shall be valid only for the calendar year for which issued.

1660.2 The permit for any new oil well shall be issued only after it has been determined that such location for an oil well complies with the provisions of this Code.

1660.3 The application for a permit to drill an oil well shall be accompanied by a plot plan drawn to scale or with dimensions showing all buildings and improvements within a radius of 300 feet of the exact location of the proposed well.

1660.4 Each oil storage tank and oil well location shall have posted in a conspicuous place on or near such tank or well, a legible sign with the name of the owner or operator and the telephone number where a responsible person may be reached, printed thereon.

1660.5 Soundproofing Material. Where soundproofing material is required during oil field operations, such materials shall be noncombustible. Field loading racks shall conform to the provisions of Subsection 1635.1.

1660.6 Smoking. Smoking shall not be permitted at any oil well or tank location, except in designated areas approved by the Fire Official.

1660.7 Fire Control. A minimum of two fire extinguishers shall be maintained at well locations where drilling, servicing or repair work is being conducted. Each such extinguisher shall have a minimum classification of 20B as set forth in NFPA 10.

CHAPTER 17

FUMIGATION AND THERMAL INSECTICIDAL FOGGING

SECTION 1701 GENERAL

1701.1 Scope. This Chapter applies to fumigations and thermal insecticidal fogging operations that shall conform to all other applicable requirements of this Code, as well as to the following provisions.

1701.2 Sources of Ignition. All fires, open flames and similar sources of ignition shall be eliminated from the space under fumigation or thermal insecticidal fogging. Heating, if needed, shall be of an approved type.

1701.3 Electricity. Electricity shall be shut off, except circulating fans may be used provided such equipment is designed and installed so as not to create an ignition hazard.

1701.4 Notification of Fumigation. The Fire Official shall be notified in writing at least 24 hours before any building, structure or ship is to be closed in connection with the use of any toxic or flammable fumigant.

1701.5 Breathing Apparatus Required. All persons engaged in the business of fumigation or thermal insecticidal fogging shall maintain and have available approved, protective breathing apparatus.

1701.6 Watchman Required During Fumigation. Where a flammable gas is used for fumigation, the employer shall be required to have 24-hour supervision from the time the premises have been fumigated until all ventilation work has been completed (approved gas-tight vaults or tanks are exempt from this requirement).

1701.7 Sealing of Building. Except for approved tarps and irrespective of the type of fumigant employed, the use of paper or other similar non-fire-retardant material to wrap or cover a building in excess of that required for the sealing of cracks, casements, etc., is prohibited.

1701.8 Warning Signs. Whenever fumigants are used or stored, conspicuous warning signs bearing the “skull and crossbones” emblem, with the words: “DANGER! POISON GAS! KEEP OUT!” and designating the name of the fumigant, and the fumigators name, address and telephone number, shall be posted in such locations as to give adequate warnings thereof.

1701.9 Venting and Clean Up. At the end of the exposure period, fumigators shall safely and properly ventilate the premises and contents, and properly dispose of all fumigant containers, residues, debris and other materials used for such fumigation.

1701.10 Flammable Fumigants Restricted. The use of carbon bisulfide (CS₂) and hydrocyanic acid (HCN) shall be restricted to agricultural fumigations.

1701.11 Gasoline-Powered Equipment. Gasoline-powered fumigation equipment shall be an approved type acceptable to the Fire Official.

CHAPTER 18

GARAGES

SECTION 1801

GENERAL

1801.1 Garages shall conform to all other applicable requirements of this Code, as well as the provisions in this Chapter.

1801.2 Cleaning with Flammable Liquids. No Class I flammable liquid shall be used in or in connection with any garage for washing parts or removing grease or dirt, unless in a special closed machine approved for the purpose or in a separate, well-ventilated room constructed in accordance with the provisions of the *EPCOT Building Code* for a Group H occupancy.

1801.3 Handling of Gasoline and Oils. The fuel tanks of motor vehicles shall be filled directly through hose from approved pumps attached to approved portable tanks or drawing from underground storage tanks. Storage and handling of flammable or combustible liquids shall conform to Chapter 16. No transfer of gasoline in any garage shall be made in any open container.

1801.4 Garage Floors. Garage floors shall drain to approved oil separators or traps discharging to the sewer in accordance with the *EPCOT Plumbing Code*. Contents of oil separators or traps of floor drainage systems shall be collected at sufficiently frequent intervals and removed from the premises to prevent oil from being carried into the sewers. Self-closing metal cans shall be used for all oily waste.

1801.5 Waste Oils. Waste oils shall be stored in approved containers or tanks.

1801.6 Appliances and Equipment. Fixed appliances and equipment installed in a garage shall comply with the provisions of the *EPCOT Building Code* and the *EPCOT Mechanical Code*.

CHAPTER 19

HAZARDOUS CHEMICALS

SECTION 1901 SCOPE

1901.1 This Chapter shall apply to materials not otherwise covered in this Code, which are highly flammable; may react to cause fires or explosions; or, by their presence, create or augment a fire or explosion hazard; or, because of the toxicity, flammability or liability to explosion, render fire fighting abnormally dangerous or difficult; also, to flammable or combustible liquids that are chemically unstable and may spontaneously form explosive compounds, undergo spontaneous reactions of explosive violence or, with sufficient evolution of heat, be a fire hazard. Hazardous chemicals shall include, but not be limited to, such materials as flammable solids, corrosive liquids, radioactive materials, oxidizing materials, potentially explosive chemicals, highly toxic materials and poisonous gases, as defined in this Code.

SECTION 1902 GENERAL

1902.1 The manufacture, storage, handling and use of hazardous chemicals shall be safeguarded with such protective facilities as public safety requires.

1902.2 The Fire Official may require the separation, or isolation, of any chemical when in combination with other substances may bring about a fire or explosion, or may liberate a flammable or poisonous gas.

1902.3 The Fire Official may require separation from other storage occupancies or buildings when the quantity stored constitutes a hazard.

1902.4 Defective containers that permit leakage or spillage shall be disposed of or repaired, in accordance with recognized safe practices; no spilled materials shall be allowed to accumulate on floors or shelves.

1902.5 Where kept for retail sale in containers or packages usual to the retail trade, storage shall be neat and orderly, and shelves shall be of substantial construction.

1902.6 Where specific requirements are not otherwise established, storage, handling and use of hazardous chemicals shall be in accordance with nationally recognized good practice.

SECTION 1903 OXIDIZING MATERIALS

1903.1 Packaged oxidizing materials shall be stored in dry locations and separated from organic and other combustible materials. Bulk oxidizing materials shall not be stored on or against wooden surfaces.

1903.2 Oxidizing materials that have a severe fire hazard and may deflagrate on exposure to fire, shock or friction, but are not expected to detonate, shall be in segregated or oscillated

storage. Segregation shall be by walls having a fire-resistance rating of not less than 2 hours. Automatic sprinklers shall be provided where the building is not adequately isolated.

1903.3 Oxidizing materials that may detonate on exposure to fire, shock or friction shall comply with the requirements of Subsection 1903.2.

SECTION 1904 RADIOACTIVE MATERIALS

1904.1 Durable, clearly visible signs of warning of radiation dangers shall be placed at all entrances to areas or rooms where radioactive materials are used or stored. In addition, each container in which radioactive materials are used, stored or transported shall bear a durable, clearly visible, appropriate warning sign. Such signs shall bear the three-bladed radiation symbol in magenta or purple on a yellow background in accordance with nationally recognized good practice.

1904.2 Signs are not required for storage of manufactured articles other than liquids, such as instruments or clock dials, or electronic tubes or apparatus of which radioactive materials are a component part, and luminous compounds, when securely packed in strong containers, provided the gamma radiation at any surface of the package is less than 10 milliroentgens in 24 hours.

1904.3 When not in use, radioactive materials shall be kept in adequately shielded fire-resistant containers of such design that the gamma radiation will not exceed 200 milliroentgens per hour or equivalent at any point of readily accessible surface.

SECTION 1905 UNSTABLE CHEMICALS

1905.1 Unstable chemicals shall be stored away from all heat-producing appliances and electrical devices, and shall be protected from external heat, fire and explosion. Explosives and blasting agents shall not be stored in the same building or in close proximity to such materials, except in accordance with Subsection 1211.1 Good housekeeping shall be maintained. Uncontaminated contents of broken or cracked bags, packages or other containers shall be transferred to new and clean containers before storing. Other spilled materials and discarded containers shall be promptly gathered up and destroyed in an approved manner. All electric bulbs shall be equipped with guards to prevent breakage. Open lights or flames and smoking shall be prohibited in or near storage areas. Internal combustion motor vehicles or lift trucks shall not be parked or stored in the room or compartment where such chemicals are located.

1905.2 Organic Peroxides. A permit is required for amounts exceeding 10 pounds. Amounts up to 50 pounds shall be stored in approved cabinets.

1905.3 Storage in amounts in excess of 50 pounds shall be in a detached, well-isolated, ventilated and unheated storage building constructed in accordance with the *EPCOT Building Code*. The floor shall be noncombustible and the roof shall be of a lightweight, insulated type.

1905.4 If not adequately protected by a fast-acting, deluge-type automatic sprinkler system, the storage building shall be located the minimum distances from flammable or combustible liquid storage, combustible materials in the open, and from any other building or highway, as referenced in Table 19A.

**TABLE 19A
ORGANIC PEROXIDE WEIGHT AND DISTANCE**

WEIGHT OF ORGANIC PEROXIDE (pounds)	DISTANCE (feet)
50 to 100	75
100 to 500	100
500 to 1,000	125
1,000 to 3,000	200
3,000 to 5,000	300

1905.5 General.

- Cabinets shall be located in cool dry areas, in which temperatures shall not exceed that recommended by the manufacturer.
- Shelves shall be of noncombustible material.
- All storage shall be in the original shipping containers.
- The various organic peroxides should be separated from each other in the storage area to prevent accidental misuse of materials. No other materials should be stored in the organic peroxide storage room, building or area, whatever the case may be.
- No organic peroxide container is to be opened in the designated storage room, building or area, only in the immediate production area where it will be used. No secondary or loose storage of organic peroxide should be permitted in the manufacturing building.
- Liquid organic peroxides shall be shipped in containers with specially vented caps, other types of caps permitted by the Department of Transportation shall be acceptable. Liquid organic peroxides shall not be transferred from the original container to any other type container.
- Organic peroxides, which are diluted or inhibited with water, should remain sealed in their original containers until use. Open containers lead to the evaporation of water and expose a more hazardous dry peroxide.
- Production and/or manufacturing areas will be limited to one day's supply of peroxides. The rest must be in a designated storage room, building or area.
- Containers should be stored only as high as they can be easily lifted. They should be separated by sufficient aisle space to permit sprinkler water to reach all of the exposed sides of the containers.
- Organic peroxides should be stored in original shipping containers. They should not be bulked and repackaged.
- Care shall be taken to avoid rough handling or contamination of these chemicals.
- Readily legible warning signs and placards shall be prominently placed in storage of processing areas.
- Where liquid peroxides are used, the occupancy should maintain a large drum of noncombustible vermiculite or perlite to soak off spills.

1905.6 Nitromethane. A suitably oscillated outdoor storage area shall be provided for nitromethane. Hazardous processing shall not be permitted in the vicinity of this storage area. Nitromethane shall be stored in the drums in which it is received; in an underground tank with suitable corrosion protection and a minimum of 2 feet of earth over the tank; or in barricaded tanks above ground. If the drum storage is not adequately protected by a fast-acting, deluge-type automatic sprinkler system, the storage of 2,000 pounds or more shall be located the minimum distances from inhabited buildings, as referenced in Table 19B.

Care shall be taken to avoid rough handling or contamination of this chemical. Readily legible warning signs and placards shall be prominently placed in the storage and processing areas.

1905.7 Ammonium Nitrate. All flooring in storage and handling areas shall be of noncombustible material and shall be without drains, traps, pits or pockets into which any molten ammonium nitrate could flow and be confined in case of fire.

1905.8 Each storage pile of bags or other authorized packages and containers of such materials shall not exceed 12 feet in height, 12 feet in width and 30 feet in length. Such pile units shall be separated by a clear space of not less than 36 inches in width from the base to the top of piles, serving as cross aisles in the storage area shall be not less than 4 feet in width. A clearance of not less than 30 inches shall be maintained from building walls and partitions and of not less than 36 inches from ceilings or roof structural members with a minimum of 18 inches from sprinklers.

1905.9 Ammonium nitrate storage areas shall be separated by a space of 30 feet or by a tight noncombustible partition from storage of organic chemicals; corrosive liquids; compressed gases; flammable and combustible materials; or other contaminating substances, such as sulphur, coal, flour, metallic powders, such as zinc copper and magnesium, where storage of such materials is permitted with ammonium nitrate.

1905.10 Quantities of ammonium nitrate or ammonium nitrate fertilizer, having no organic coating in the form of crystals, flakes, grains or pills, including fertilizer-grade, dynamite-grade, nitrous-oxide-grade and technical-grade ammonium nitrate and ammonium nitrate phosphate (containing 60 percent or more ammonium nitrate by weight) or more than 50 tons total weight, shall be stored in a well-ventilated building. Such building shall be of 1-hour fire-resistive or noncombustible construction as specified in the *EPCOT Building Code*, or shall be equipped with an approved automatic sprinkler system. In populated areas, quantities of 2,500 tons or more shall be stored in well-ventilated buildings of 1-hour fire-resistive or noncombustible construction as specified in the *EPCOT Building Code*, equipped with an

approved automatic sprinkler system. No combustible materials or ammonium nitrate sensitizing contaminants shall be stored in this building.

1905.11 Storage of ammonium nitrate, coated or mixed with organic anticaking materials, except compounded blasting agents, shall not be permitted in populated and congested areas. Outside such areas, quantities of 500 tons or less may be stored in well-ventilated buildings of 1-hour fire-resistive or noncombustible construction as specified in the *EPCOT Building Code*, equipped with an approved automatic sprinkler system.

SECTION 1906 HIGHLY TOXIC MATERIALS

1906.1 Highly toxic materials are materials so toxic to man as to afford an unusual hazard to life and health.

1906.2 Highly toxic materials shall be segregated from other chemicals and combustible and flammable substances by storage in a room or compartment separated from other areas by a 1-hour fire separation constructed as specified in the *EPCOT Building Code*. The storage room shall be provided with adequate drainage facilities, and natural or mechanical ventilation to the outside atmosphere constructed as specified in the *EPCOT Mechanical Code*.

1906.3 Legible warning signs and placards stating the nature and location of the highly toxic materials shall be posted at all entrances to areas where such materials are stored or used.

SECTION 1907 POISONOUS GASES

1907.1 Storage of poisonous gases shall be in rooms of at least 1-hour fire-resistive construction as specified in the *EPCOT Building Code*, and having natural or mechanical ventilation adequate to remove leaking gas. Such ventilation shall not discharge to a point where the gases may endanger any person.

1907.2 Legible warning signs stating the nature of the hazard shall be placed at all entrances to locations where poisonous gases are stored.

1907.3 Corrosive Liquids. Satisfactory provisions shall be made for containing and neutralizing, or safely flushing away, the leakage of corrosive liquids, which may occur during storage or handling.

1907.4 Storage. Cabinets for the storage of hazardous materials shall be approved and substantially constructed of No. 18 gauge sheet steel or a minimum of 1-inch plywood or equivalent. Doors shall be self-closing and self-latching. Cabinets shall be painted with an intumescent-type paint and shall be conspicuously labeled in red letters reading: "HAZARDOUS—KEEP FIRE AWAY"

1907.5 Designation of Cargo. No person shall operate any tank vehicle transporting any corrosive, cryogenic, hypergolic or pyrophoric material unless at the time of such transportation there is displayed upon each side and the rear of the tank vehicle an approved sign, which shall specifically designate the cargo.

TABLE 19B
NITROMETHANE WEIGHT, NUMBER OF DRUMS AND DISTANCE

WEIGHT		APPROPRIATE NUMBER OF DRUMS	DISTANCE (feet)
Pounds Over	Pounds Not Over		
Not over 2,000		4	100
2,000 to 10,000		20	200
10,000 to 20,000		40	300
20,000 to 40,000		80	400
40,000 to 80,000		160	500

CHAPTER 20

LIQUEFIED PETROLEUM GASES

SECTION 2001 GENERAL

2001.1 Scope. This Chapter shall apply to the storage, handling and transportation of LP gas and the installation of all equipment pertinent to systems for such uses.

2001.2 Inspection. It shall be the duty of the Fire Official to inspect LP-gas installations to determine if the provisions of this Chapter are being complied with.

SECTION 2002 INSTALLATION

2002.1 All LP-gas equipment, including such equipment installed at utility gas plants, shall be installed in accordance with the provisions of NFPA 58 and NFPA 59, except as otherwise provided in this Chapter, or in other laws or regulations legally in effect.

2002.2 Location of Containers. The storage of LP gas, for the protection of heavily populated or congested commercial areas, the aggregate capacity at any one installation shall not exceed 2,000 gallons of water capacity; except in particular installations, this capacity limit may be altered at the discretion of the Fire Official after consideration of special features, such as topographical conditions, nature of occupancy, proximity to buildings, capacity of proposed tanks, degree of private fire protection and the facilities of the Fire Department.

2002.3 Multiple-container installations with a total storage water capacity of more than 180,000 gallons (150,000 gallons LP-gas capacity) shall be subdivided into groups containing not more than 180,000 gallons in each group. Such groups shall be separated by a distance of not less than 50 feet, unless the tanks are (1) buried or mounted in an approved manner; (2) protected with approved insulation on such areas that may be subject to impingement of ignited gas from pipelines or other leakage; (3) protected by firewalls of approved construction conforming to the *EPCOT Building Code*; (4) protected by an approved system for the application of water; or (5) protected by other approved means. Where one of these forms of protection is provided, the separation shall not be less than 25 feet between such container groups.

2002.4 The storage and transportation of LP gas and the installation of all pertinent equipment shall be installed and maintained in accordance with NFPA 58 and subject to the approval of the Fire Official.

2002.5 No stationary storage tank shall be less than 10 feet from the nearest street line or sidewalk.

SECTION 2003 PARKING AND GARAGING

2003.1 Except in an emergency, no tank vehicle shall be left unattended on any street, highway, avenue or alley, provided that this shall not prevent a driver from the necessary absence

from the truck in connection with the delivery of his load, except that during actual discharge of the liquid some responsible person shall be present at the vehicle, nor shall it prevent stops for meals during the day or night if the street is well lighted at the point of parking.

2003.2 Tank vehicles containing flammable or combustible liquids shall not be parked out of doors at any one point for longer than 1 hour, except off the streets, and at least 50 feet from any buildings used for assembly, institutional or residential occupancy.

2003.3 Tank vehicles shall not be parked or garaged in any buildings other than those specifically approved for such use by the Fire Official.

SECTION 2004 PROHIBITED USE

2004.1 LP gas shall not be used for the purpose of operating any device or equipment, unless such equipment or device is approved for use with LP gas. Such gas shall not be released to the atmosphere, except through an approved device.

2004.2 LP gas and/or containers shall not be stored inside structures, buildings or portions of buildings classified as assembly occupancies.

2004.3 Safety Precautions. No person shall tamper with or make ineffective the safety devices of any LP-gas container.

2004.4 Every tank vehicle used for the transportation of LP gas shall be marked on each side and rear, thereof, on a sharply contrasting background, with: "FLAMMABLE COMPRESSED GAS" or "FLAMMABLE GAS" in block letters at least 3 inches high, and in block letters at least 2 inches high: "LIQUEFIED PETROLEUM GAS," "BUTANE" or "PROPANE," as appropriate.

2004.5 No person shall fill or maintain an LP-gas container with LP gas in excess of the fixed outage gauge installed by the manufacturer or the weight stamped on the tank.

2004.6 Physical Damage Protection. Containers shall be protected from physical damage acceptable to the Fire Official and/or meet the requirements of NFPA 58.

CHAPTER 21

LUMBER YARDS AND WOODWORKING PLANTS

SECTION 2101 GENERAL

2101.1 Open Yard Storage. Lumber shall be piled with due regard to stability of piles and, in no case, higher than 20 feet.

2101.2 Driveways between and around lumber piles shall be at least 16 feet wide and maintained free from the accumulation of rubbish, equipment, or other articles or materials. Driveways shall be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced.

2101.3 Permanent lumber storage exceeding 100,000 board feet shall be surrounded with a suitable fence at least 6 feet high, unless storage is within a building.

SECTION 2102 FIRE HAZARDS

2102.1 The burning of shavings, sawdust and refuse materials shall be permitted only under boilers, in furnaces, incinerators or refuse burners, safely constructed and located. Stacks shall be provided with approved spark arresters having openings, which will eliminate the danger from sparks, such as an expansion chamber, baffle walls or other effective arrangement. At boiler or other points where sawdust or shavings are used as fuel, a storage bin of noncombustible construction with raised sill shall be provided.

2102.2 Smoking shall be prohibited, except in specified safe locations in buildings. "NO SMOKING" signs shall be painted on exterior building walls and on signs, erected at driveways' edges. "NO SMOKING" signs shall be posted throughout all buildings, except in specific locations designated as safe for smoking purposes.

2102.3 Weeds shall be kept down throughout the entire year and shall be sprayed as often as needed with a satisfactory weed killer, or cut or grubbed out. Dead weeds shall be removed.

2102.4 Debris, such as sawdust, chips and shorts, shall be removed regularly. Proper housekeeping shall be maintained at all times.

SECTION 2103 FIRE EXTINGUISHERS

2103.1 An approved yard hydrant system or portable fire-extinguishing equipment suitable for the fire hazard involved shall be provided for open storage yards. Yard hydrant systems shall be installed in accordance with the provisions of NFPA 24. Portable fire extinguishers shall be located so the travel distance to the nearest unit does not exceed 75 feet.

2103.2 Buildings. Portable fire extinguishers shall be provided in all buildings in accordance with the provisions of NFPA 10.

2103.3 Saw mills, planing mills and other woodworking plants shall be equipped with refuse removal systems, which will collect and remove sawdust and shavings as produced. Blower and exhaust systems shall be installed in accordance with the provisions of NFPA 91.

2103.4 Open Yards. Fire-fighting equipment, either first aid, fire appliances or hose supplied from a suitable water system, shall be provided within reach of any machine producing shavings or sawdust. Portable fire extinguishers shall be provided in accordance with the provisions of NFPA 10.

CHAPTER 22

MAGNESIUM

SECTION 2201 GENERAL

2201.1 Scope. This Chapter applies to the storage, handling and processing of magnesium. Magnesium shall mean the pure metal, as well as those alloys of which the major part is magnesium.

2201.2 Storage of magnesium pigs, ingots and billets in the open shall be in piles not exceeding 1 million pounds each, separated by aisles not less in width than one-half the height of the pile, and separated from combustible material or buildings on the same or adjoining property by a distance of not less than the height of the nearest pile.

2201.3 Storage of pigs, ingots and billets in buildings shall be on floors of noncombustible construction, in piles not larger than 500,000 pounds each, separated by aisles not less in width than one-half the height of the pile.

2201.4 Floors under and around melting pots shall be of non-combustible construction.

2201.5 The size of storage piles of magnesium articles in foundries and processing plants shall not exceed 1,250 cubic feet and shall be separated by aisles not less in width than one-half the height of the pile.

2201.6 Approved means shall be provided for control of magnesium fires in heat-treating ovens.

SECTION 2202 MAGNESIUM PROCESSING OPERATIONS

2202.1 At each grinding, buffing or wire-brushing operation on magnesium, not including rough finishing of castings, dust shall be collected by means of suitable hoods or enclosures connected to a liquid-precipitation type of separator, such that the dust will be converted to sludge without contact in a dry state with any high-speed moving parts.

2202.2 Connecting ducts or suction tubes shall be completely grounded and as short as possible, with no unnecessary bends. Ducts shall be carefully fabricated and assembled with a smooth interior and internal lap joints pointing in the direction of airflow, and without unused capped side outlets, pockets or other dead-end spaces, which might allow an accumulation of dust.

2202.3 Each machine shall be equipped with its individual dust separation unit, except with multi-unit machines of not more than two dust-producing units may be served by one separator. Not more than four portable dust-producing units in a single enclosure or stand may be served by one separator unit.

2202.4 Power supply to dust-producing machines shall be interlocked with the motor driving the exhaust blower and the liquid level controller of the wet collector in such a way that improper functioning of the dust-collecting system will shut

down the machine it serves. A time-delay switch or equivalent device shall be provided in the dust-producing machine to prevent the starting of its motor drive until the wet collector is in complete operation and several changes of air have swept out any residual hydrogen.

2202.5 All electric wiring, fixtures and equipment in the immediate vicinity of and attached to dust-producing machines, including those used in connection with separator equipment, shall be approved types and installed for use in Class II, Division I, hazardous locations, as specified in the *EPCOT Electrical Code*.

2202.6 All equipment shall be securely grounded by permanent ground wires as specified in the *EPCOT Electrical Code*.

2202.7 Fire Control. A supply of approved extinguishing materials in a substantial container with a hand scoop or shovel for applying material on magnesium fires or an approved extinguisher unit designed for use with such material shall be kept within easy reach of every operator performing a machining, grinding or other processing operation on magnesium.

SECTION 2203 STORAGE

2203.1 Warehouses and Stores. Magnesium storage in quantities greater than 50 cubic feet shall be separated from the storage of other materials that are either combustible or in combustible containers, by aisles equal in width to not less than the height of the piles of magnesium.

2203.2 Magnesium storage in quantities greater than 1,000 cubic feet shall be separated into piles, each not larger than 1,000 cubic feet with aisles between equal in width to not less than the height of the piles.

2203.3 Magnesium in quantities greater than 1,000 cubic feet or in combustible containers, or within 30 feet of other combustibles, shall not be stored in unsprinklered combustible buildings.

SECTION 2204 HANDLING

2204.1 Magnesium Fines (Fine Magnesium Scrap). Chips, turnings and other fine magnesium scrap shall be collected from the pans or spaces under machines and from other places where they collect at least once each working day, and placed in a covered, vented steel container and removed to a safe location.

2204.2 Magnesium fines shall be kept separate from other combustible materials.

2204.3 Storage in quantities greater than 50 cubic feet of fine magnesium scrap (six, 55-gallon steel drums) shall be separated from other occupancies by an open space of at least 50

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feet or by an area separation wall constructed as specified in the *EPCOT Building Code*.

2204.4 Storage in quantities greater than 1,000 cubic feet shall be separated from all buildings other than those used for magnesium scrap recovery operations by a distance of not less than 100 feet.

CHAPTER 23

OIL-BURNING EQUIPMENT

SECTION 2301 SCOPE

2301.1 This Chapter applies to oil-burning equipment, except internal combustion engines, oil lamps and portable devices, such as blow torches, melting pots and weed burners. Oil-burning equipment shall be of an approved type.

SECTION 2302 GENERAL INSTALLATION

2302.1 The installation shall be made in accordance with the instructions of the manufacturer.

2302.2 The installation shall be such as to provide reasonable accessibility for cleaning heating surfaces, removing burners, replacing motors, controls, air filters, draft regulators and other working parts, and for adjusting, cleaning and lubricating parts requiring such attention.

2302.3 After installation of the oil-burning equipment, a complete cycle of operation tests shall be conducted to make certain that the burner is operating in a safe and acceptable manner, and that all safety devices function properly.

2302.4 Electrical wiring and equipment used in connection with oil-burning equipment shall be installed in accordance with the provisions of the *EPCOT Electrical Code*.

2302.5 The grade of fuel oil used in a burner shall be that for which the burner is approved and as stipulated by the manufacturer. Crankcase oil or any oil containing gasoline shall not be used.

2302.6 The design, construction and installation of fuel-oil tanks shall comply with Chapter 16.

2302.7 Unenclosed inside fuel-oil supply tanks shall be prohibited. Fuel-oil supply tanks may be installed inside buildings provided they are enclosed in accordance with the provisions of Chapter 16.

2302.8 Stoves that are designed for barometric feed shall not be connected to separated oil supply tanks.

2302.9 Unvented heating appliances shall be equipped with integral tanks of capacity not more than 2 gallons.

2302.10 Oil supply tanks, other than those furnished as an integral part of the stove or range, shall not be located within 5 feet horizontally of any fire or flame; except tanks of not more than a 6-gallon capacity may be within this distance, but not within 2 feet of the stove or range in which the burner is installed, provided the temperature rise of the oil supply at this distance is not excessive when the burner is operated at full capacity.

SECTION 2303 INSTALLATION

2303.1 Fill, Return, Supply and Vent Piping. A fill pipe on a tank larger than 60 gallons shall terminate outside a building at least 2 feet from any building opening. Every fill terminal shall be equipped with a tight metal cover.

2303.2 A return line from a burner or pump to a supply tank shall enter the top of the tank.

2303.3 An auxiliary tank installed in the supply piping between a burner and its main fuel supply tank shall be filled by pumping from storage tanks.

2303.4 All piping, except the burner supply line from a tank, having a capacity of not more than 550 gallons and the cross connection between two such tanks having an aggregate capacity of 550 gallons or less, shall be connected into the top of the supply tank.

2303.5 The burner supply connection to the tank or tanks having a capacity of more than 550 gallons shall be connected to the top of the tank. In commercial and industrial installations, for number five and six grade oil, the burner supply connection may be below the liquid level, but each such connection shall be provided with an approved valve.

2303.6 Pressure feed from tanks shall not be used.

2303.7 All tanks in which a constant oil level is not maintained by an automatic pump shall be equipped with an approved method of determining the oil level.

SECTION 2304 PIPING

2304.1 Materials and Design. All piping shall be standard weight wrought-iron steel or brass pipe with standard fittings; or brass or copper tubing with fittings of an approved type, except that approved flexible metal hose may be used for reducing the effect of jarring and vibration or where rigid connections are impracticable. Cast-iron fittings shall not be used.

2304.2 Aluminum tubing shall not be used between the fuel-oil tank and the burner unit.

2304.3 Pipe used in the installation of all burners and appliances other than conversion range oil burners shall not be smaller than $\frac{3}{8}$ -inch iron pipe size or $\frac{3}{8}$ inch outside diameter (OD) tubing. Copper or brass tubing shall have a 0.035-inch nominal and 0.032-inch minimum wall thickness. Flexible metal hose shall be installed in full compliance with its approval.

OIL-BURNING EQUIPMENT

2304.4 Piping between conversion range oil burners and tanks shall be standard steel, wrought-iron or brass pipe not smaller than $\frac{1}{4}$ inch in size, or brass or copper tubing not less than $\frac{5}{16}$ inch OD with a wall thickness not less than 0.049 inch.

2304.5 Piping shall be substantially supported and protected against physical damage and, where necessary, protected against corrosion. All buried piping shall be protected against corrosion.

2304.6 Pipe joints and connections shall be made tight with suitable lubricant or pipe compound. Unions requiring gaskets or packing, right and left couplings, and sweat fittings shall not be used in oil lines.

2304.7 Proper allowance shall be made for expansion, contraction, jarring and vibration.

2304.8 Where supply tanks are set below the level of the burner, the oil piping shall be so laid as to pitch toward the supply tank without traps.

2304.9 An oil pump not a part of an approved burner shall be of a positive-displacement type, which automatically shuts off the oil supply when stopped.

2304.10 Readily accessible, manual shutoff valves shall be installed at each point, where required, to avoid oil spillage during servicing. The valve shall be installed to close against the supply.

2304.11 Where a shutoff is installed in the discharge line of an oil pump, not an integral part of a burner, a pressure relief valve shall be connected into the discharge line between the pump shutoff valve and arranged to return surplus oil to the supply tank or to bypass it around the pump, unless the pump includes an internal bypass.

2304.12 Where oil is supplied to a burner requiring uniform flow by gravity feed and a constant level valve is not incorporated in the burning assembly or the oil is not supplied by an automatic pump, a constant level valve shall be installed in the supply line at the gravity tank or as close thereto as practicable, to insure uniform delivery of oil to the burner. The vent opening of such constant level valve shall be connected by piping or tubing to the outside of the building, unless the constant level valve is provided with an anti-flooding device. Vent piping or tubing of constant level valves shall not be connected to tanks or tank vents.

SECTION 2305 INSTALLATION OF CONVERSION OIL BURNERS AND OIL-FIRED UNITS

2305.1 Oil burners, other than oil stoves with integral tanks, shall be provided with some means for manually stopping the flow of oil to the burner. Such device or devices shall be placed in a convenient location at a safe distance from the burner.

2305.2 Oil burners for which a competent attendant will not be constantly on duty in the room where the burner is located while the burner is in operation shall be equipped with a primary safety control of a type specifically approved for the burner with which it is used. When primary safety controls

are installed in connection with other oil burners, such automatic devices shall be of a type specifically approved for use with the burner to which they are attached.

2305.3 Each appliance fired by conversion oil burners and each oil-fire unit shall be provided with automatic limit controls that will prevent unsafe pressure, low water in a steam boiler, or overheating within a hot water boiler, furnace or heater.

2305.4 Limiting controls and low-water shutoffs intended to prevent unsafe operation of heating equipment by opening an electrical circuit to the burner or shutoff device shall be so arranged as to effect the direct opening of that circuit whether the switching mechanism is integral with the sensing element or remote from the same.

2305.5 A water heater shall be provided with water pressure, temperature and vacuum relief devices. Means shall be provided to prevent siphoning in any boiler or tank to which any circulating water heater is attached.

2305.6 Electric motor-driven oil burners of the type not equipped with primary safety controls with integral oil pumps and electric motor-driven pump sets for use with such burners not equipped with integral pumps, shall be provided with a motor controller incorporating no-voltage protection to be wired into the power supply to the motor.

2305.7 In systems where either steam or air is used for atomizing the oil or where air for combustion is supplied by a source that may be interrupted without shutting off the oil supply, the oil and atomizing or air supply shall be interlocked in a manner to immediately shut off the oil supply upon failure of the atomizing or air supply.

2305.8 When automatically operated burners are used in installations equipped with forced or induced draft fans, or both, means shall be provided to immediately shut off the oil supply upon fan failure.

2305.9 Oil burners not equipped to provide safe automatic restarting after shut down shall require manual restarting after any control function to extinguish the burner flame.

2305.10 Oil-fired appliances shall be installed in rooms that are large compared with the size of the appliance, except that an appliance specifically approved for installation in a confined space, such as an alcove or closet, may be so installed when the installation is in compliance with the approval. In alcove and closet installations, the clearances from the appliance to the walls and ceilings shall not be less than specified in the approval, regardless of the type of construction.

2305.11 Oil-burning appliances shall be installed in accordance with the provisions of NFPA 31.

SECTION 2306 INSTALLATION OF HEATING AND COOKING APPLIANCES

2306.1 Kerosene and oil stoves shall be equipped with a primary safety control furnished as an integral part of the appliance by the manufacturer to stop the flow of oil in the event of flame failure.

2306.2 A conversion range oil burner shall be equipped with a thermal (heat-actuated) valve in the oil supply line, located in the burner compartment of the stove.

2306.3 Small heating and cooking appliances shall be installed in accordance with the provisions of NFPA 31.

CHAPTER 24

OVENS, INDUSTRIAL BAKING AND DRYING

SECTION 2401 GENERAL

2401.1 Scope. This Chapter shall apply to the location, construction and operation of industrial baking and drying ovens, which are heated with oil or gas fuel or, during operation, contain flammable vapors from the products being baked or dried.

2401.2 Requirements. This Chapter is intended to provide requirements for the operation of these ovens within certain limitations of control depending on oven design, paint formulation and ventilation requirements, the disregard of which may cause them to function in an unsafe manner, thereby becoming liable to destruction by fire or explosion. In addition to the requirements of this Chapter, all industrial baking and drying ovens shall comply with the applicable provisions of NFPA 86.

SECTION 2402 LOCATION AND CONSTRUCTION

2402.1 Ovens, oven heaters and related equipment shall be located with due regard to the possibility of fire resulting from overheating, the escape of fuel gas or fuel oil, and the possibility of damage to the building and injury to persons resulting from explosion.

2402.2 Ovens shall be located at or above grade or, if in basements, at least 50 percent of the wall area of the room in which the oven is located shall be above grade.

2402.3 Ovens shall be located as to be readily accessible for inspection and maintenance, and with adequate clearances to permit the proper functioning of explosion vents. Roofs and floors of ovens shall be sufficiently insulated and ventilated to keep temperatures at combustible ceilings and floors below 160°F.

2402.4 Ovens shall be constructed of noncombustible materials throughout, except where the maximum oven operating temperatures is not more than 160°F. The amount of insulation used in oven panel construction shall be enough to prevent the outside surface temperature from exceeding 160°F, or adequate guards shall be provided to protect personnel.

2402.5 Ovens that may contain flammable air-gas mixtures shall be equipped with relief vents for freely relieving internal explosion pressures.

2402.6 All duct work shall be constructed of noncombustible material. Ducts shall be made tight throughout and shall have no openings other than those required for the proper operation and maintenance of the system. Ducts passing through combustible walls, floors or roofs shall have adequate insulation and clearances to prevent surface temperatures from exceeding 160°F. Exhaust ducts shall not discharge near doors, windows or other air intakes in a manner that will permit re-entry of vapors into the building.

CHAPTER 2403 VENTILATION

2403.1 Ovens in which flammable or toxic vapors are liberated or through which products of combustion are circulated shall be ventilated by the introduction of a supply of fresh air and proper exhaust to outdoors. Discharge pipes shall not terminate within 10 feet measured horizontally from any door, window or wood frame walls of any building. Such oven ventilation shall be arranged to provide vigorous, and well-distributed air circulation within the oven and to insure the flammable vapor concentration will be safely below the lower explosive limit at all times. Unless the oven is separated in accordance with specific approval specifying particular solvents and rate of ventilation, the rate of ventilation shall not be less than 10,000 cubic feet of fresh air per gallon of solvent evaporated in continuous process ovens, and not less than 380 cubic feet per minute per gallon of flammable solvent evaporated in batch process ovens.

2403.2 Exhaust duct openings shall be located in the area of greatest concentration of vapors.

2403.3 All exhaust shall be by mechanical means using power-driven fans.

SECTION 2404 SAFETY CONTROLS

2404.1 Safety controls, as specified in NFPA 86, shall be sufficient in number, substantially constructed, arranged to maintain the required conditions of safety, and prevent the development of fire and explosion hazards.

2404.2 Ventilation controls, suitably interlocked, shall be provided that will insure required ventilation of the system.

2404.3 Fuel safety controls, suitably interlocked and arranged to minimize the possibility of dangerous accumulations of explosive air-fuel mixtures in the heating system, shall be provided.

2404.4 Excess temperature controls shall be provided to maintain a safe operating temperature within the oven.

2404.5 Conveyor interlocks shall be provided in conveyor ovens having a flammable vapor hazard, so that the conveyor cannot move unless ventilating fans are operating and discharging the required amount of air.

CHAPTER 25

PLACES OF ASSEMBLY

SECTION 2501 GENERAL

2501.1 Motion Picture Screens. In places of assembly, no motion picture screen or screen masking shall be used that will ignite and allow flame to spread over the surface when exposed to the match flame test described in this Code.

2501.2 Exit Doors. Exit doors shall be maintained in accordance with the requirements of this Code.

2501.3 Aisles. All references to occupancies in this Chapter are as specified in the *EPCOT Building Code*. Every portion of every building in which there are installed seats, tables, merchandise, equipment or similar materials shall maintain aisles and seats as required in this Chapter.

2501.4 Every aisle shall lead to an exit door or to a cross aisle running parallel to the seats and leading directly to an exit.

2501.5 Aisles, cross aisles, corridors and passageways shall be of width at least equal to the minimum width required for exits in this Code, but in any case the width of an aisle, cross aisle or exit that it serves. An aisle shall not be less in width than 42 inches, measured at its narrowest point at the end farthest from the foyer, plus an increase of 1½ inches for each 5 feet of length of such aisle from its beginning to an exit, except that aisles with seats on one side only may be 6 inches less in width. Where egress is provided at both ends of an aisle, the aisle may have a uniform width not less than the average widths herein specified. Cross aisles shall not be less than 42 inches wide. An aisle bordering on a means of entrance shall be not less than 48 inches wide.

2501.6 When an audience is present, there shall be available a minimum of two exterior exits on opposite sides of a seating area.

2501.7 Each seating area shall have a minimum of:

- (a) Two exits from the rear of each seating area.
- (b) Two exits from the front of each seating area.
- (c) All seating areas shall be provided with a clear and unobstructed aisle around the perimeter of the seating area of not less than 72 inches.

2501.8 Movable Furniture. Where the floor space of an assembly occupancy is occupied by tables, chairs or other movable furniture, aisles at least 36 inches in clear width shall be maintained to provide ready access to exit doorways.

2501.9 Exits and aisles shall be so located that the travel distance to an exit door shall not be greater than 150 feet measured along the line of travel. Travel distance may be increased to 200 feet in sprinklered buildings.

2501.10 In all balconies and galleries having more than 20 rows of seats, there shall be provided a cross aisle not less than 48 inches wide leading directly to an exit.

2501.11 There shall not be obstructions of any kind in any aisle. Aisles shall not have a slope of more than 1 foot in 8 feet.

2501.12 Steps shall not be used in aisles of the main auditorium floor, or in other aisles, where differences of level can be overcome by gradients not exceeding those permitted herein. Where steps are used in aisles, such steps shall extend across the full width of aisles and shall be illuminated; treads and risers shall be as required in the *EPCOT Building Code* for exit stairs. No isolated steps shall be permitted, nor shall the aggregate rise of a group of steps exceed 21 inches.

SECTION 2502 SEATING

2502.1 Rows of seats between aisles shall have not more than 14 seats.

2502.2 Rows of seats, opening on to an aisle at one end only, shall have not more than seven seats. Seats without dividing arms shall have their capacity determined by allowing 18 inches per person.

2502.3 In places of assembly used regularly for theatrical or similar performances, or for the display of motion pictures, the seats shall be securely fastened to the floor. In restaurants, cafeterias and similar multipurpose places of assembly, the seats shall not be required to be fastened to the floor. All other assembly occupancies seating more than 200 persons shall have seats fastened to the floor. All seats in balconies or galleries shall be secured to the floor, except that in railed-in enclosures, boxes or loges, with level floors and having no more than 14 seats, the seats need not be fastened to the floor, or have separating arms.

2502.4 The spacing of rows of seats from back to back shall be not less than 30 inches, and not less than 27 inches, plus the sum of the thickness of the back and the inclination of that back; but, in all cases, there shall be a space of not less than 12 inches between the back of one seat and the front of the seat immediately behind it as measured between plumb lines.

2502.5 Bleacher Seats and Grandstands. Bleacher seats, grandstands and reviewing stands shall conform to the requirements of Subsection 2503.1.

2502.6 Continental or semi-continental seating shall be as specified in the *EPCOT Building Code*.

2502.7 No part of a stairway, whether interior or exterior, hallway, corridor, vestibule, balcony, or bridge leading to a stairway or exit, shall be used in a manner that will obstruct its use as an exit or that will present a hazardous condition.

2502.8 Where smoking is permitted, there shall be provided at convenient places approved noncombustible ashtrays.

PLACES OF ASSEMBLY

2502.9 All fire appliances shall be kept in proper working condition. Extinguishers, hoses and similar appliances shall be visible and accessible at all times. It shall be the duty of the owner and occupant of each building or part of a building, occupied as a place of assembly, to properly train sufficient regular employees in the use of fire appliances.

2502.10 A plan may be required for approval by the Fire Official indicating the seating arrangements, location, and width of exit ways and aisles.

2502.11 All exits in places of assembly shall be identified and lighted in accordance with this Code.

2502.12 The number of occupants of any building or portion thereof shall not be permitted to exceed the allowed or posted capacity. The capacity shall have been determined as specified in the *EPCOT Building Code*.

2502.13 No person shall permit overcrowding or admittance of any person beyond the approved capacity of any place of public assemblage.

2502.14 No person shall cause or permit any open flame to be used in any place of public assemblage, or drinking or eating establishments, except when used in conjunction with approved heating or cooking appliances, or under written permit from the Fire Official.

2502.15 No person shall use or allow to be used, any open flame, burning candle, or candles in connection with any public meeting or gathering for purposes of deliberation, worship, entertainment, amusement, instruction, education, recreation, awaiting transportation or similar purpose; or in places of public assemblage, such as churches, schools, restaurants, eating establishments, cocktail lounges or bars without first obtaining a permit from the Fire Official.

2502.16 Standby Firewatch. In places of assembly or any other place where people congregate, and due to the number of persons, or the nature of the performance, exhibition, or activity, the Fire Official may require the employ of one or more experienced fire fighter, code enforcement specialist or system specialist to be on duty at such place when it is essential for public safety.

2502.17 The standby firewatch(es) shall be subject to the Fire Official's orders at all times when so employed, and shall be in uniform or appropriately dressed, and on duty at all times the activity is being conducted.

2502.18 The standby firewatch(es) shall serve no other function when assigned to standby duties.

2502.19 Standby firewatch is not in lieu of, but in addition to, this Code.

2502.20 Every supplementary lighting system required by the *EPCOT Building Code* shall be maintained in good working order.

SECTION 2503 REVIEWING STANDS, GRANDSTANDS AND BLEACHERS

2503.1 General. All reviewing stands, grandstands and bleachers shall be maintained in conformance to the provisions of the *EPCOT Building Code*.

2503.2 Definitions. For the purpose of this Chapter, certain terms are defined as follows:

- (a) **Exit.** A point that opens directly in to a safe dispersal area or public way. All measurements are to be made to that point when determining the permissible distance of travel.
- (b) **Safe Dispersal Area.** An area that will accommodate a number of persons equal to the total capacity of the stadium, reviewing stand, grandstand or bleacher, and the building it is tributary to in such a manner that no person within the area need be closer than 50 feet from the stand or building. Dispersal areas shall be based upon an area of not less than 3 square feet per person.

SECTION 2504 SPACING AND AISLES

2504.1 Grandstands and similar structures of combustible framing shall be not more than 11 rows or 9 feet high.

2504.2 Aisles not less than 42 inches wide shall be provided so that there are not more than 20 seats between any seat and an aisle. Where backs are provided, seats shall be spaced not less than 30 inches back to back. No obstruction shall be placed in any aisle.

2504.3 A distance of 18 inches along any bench shall constitute one seat in figuring the required exit facilities.

2504.4 No vertical aisle shall have a dead end more than 16 rows.

2504.5 Stairs, ramps, handrails and guardrails shall be provided and maintained as specified in the *EPCOT Building Code*.

SECTION 2505 EXITS

2505.1 Distance to Exit. The line of travel to an exit shall be not more than 150 feet. For stands with seats without backrests, this distance may be measured by direct line from a seat to the exit from the stand.

2505.2 Aisle Used as Exit. An aisle may be considered as only one exit unless it is continuous at both ends to a required building exit or to a safe dispersal area.

2505.3 Two Exits Required. A stand with the first seating board not more than 20 inches above grade or floor may be considered to have two exits when the bottom of the stand is open at both ends.

2505.4 Every stand or section of stand within a building shall have at least two means of egress when the stand accommodates 50 persons or more.

2505.5 Every open-air stand having seats without backrests shall have at least two means of egress when the stand accommodates 300 persons or more.

2505.6 Three Exits Required. Three exits shall be required for stands within a building when there are more than 300 occupants within a stand, and for open-air stands with seats without backrests where a stand or section of a stand accommodates 1,000 occupants or more.

2505.7 Four Exits Required. Four exits shall be required when a stand or section of a stand accommodates 1,000 occupants or more, except for open-air stands with seats without backrests unless there are accommodations for 3,000 occupants or more.

2505.8 Determination of Exit Width. The total width of exits, in feet, shall be not less than the total occupant load served divided by 50, except for open-air stands with seats without backrests, the total width of exits, in feet, shall be not less than the total occupant load served divided by 150 when exiting by stairs and divided by 200 when exiting by ramps or horizontal exit. When both horizontal and stair exits are used, the total width of exits shall be determined by using both figures as applicable.

2505.9 Minimum Exit Width. No exit shall be less than 42 inches in width.

2505.10 Exit Arrangement. Exits shall be spaced not less than one-fifth of the perimeter apart.

2505.11 When more than 500 loose chairs are used in connection with athletic events, chairs shall be fastened together in groups of not less than three, and shall be secured to the ground.

2505.12 Dispersal Area Exits. Each safe dispersal area shall have at least two exits. If 6,000 persons or more are to be accommodated within such area, there shall be a minimum of three exits, and for 9,000 persons or more there shall be at least four exits. The aggregate clear width of exits from a safe dispersal area shall be determined on the basis of not less than one exit unit of 22 inches for each 500 persons to be accommodated and no exit shall be less than 42 inches in width.

SECTION 2506 CONVENTION REQUIREMENTS

2506.1 Convention requirements shall apply to all tents, buildings or portions of buildings classified as public assembly occupancies.

2506.2 Set-Ups. All convention set-ups shall be approved by the Fire Official or his authorized representative. A 14-day notice will be required prior to the convention start date.

2506.3 A plan may be required indicating seating arrangements, display booths arrangement, location, and width of exit ways and aisles.

2506.4 Any special condition required by the Fire Official shall be the responsibility of the person in charge of the convention.

2506.5 Requirements specified in Chapter 11 shall apply to convention set-ups.

2506.6 Fire Protection Devices. No convention set-up shall obstruct or hinder the operation of any installed fire protection device required by this Code or the *EPCOT Building Code*.

2506.7 Open-Flame Use. Any device (flame throwing, fire knives, torches, etc.) shall require a permit and a firewatch.

2506.8 Electrical/Lighting. All electrical and lighting shall be inspected and meet the requirements of the *EPCOT Electrical Code*.

2506.9 There shall be no grease-producing equipment (electrical or gas) in any convention area. A ventless hood cooker with a factory-installed fire protection system may be acceptable with prior approval of the Fire Official.

2506.10 A Certificate of Fire-Retardant Treatment shall be available within an exhibit as proof of any flame-retardant treatment.

SECTION 2507 DISPLAY OF MOTOR VEHICLES, WATERCRAFT OR EQUIPMENT WITH INTERNAL COMBUSTION ENGINES

2507.1 General. For the purpose of this Section, places of public assembly shall include common public areas, outside buildings used for displaying motor vehicles, watercraft or equipment with internal combustion engines.

2507.2 Display. Display of motor vehicles, watercraft or equipment with internal combustion engines shall be displayed in a manner acceptable to the Fire Official.

2507.3 Exits and Aisles. No display of motor vehicles, watercraft or equipment with internal combustion engines shall obstruct exits or aisles as required by Subsection 2502.7.

2507.4 Fire Protection Devices. No display of motor vehicles, watercraft or equipment with internal combustion engines shall obstruct or hinder the operation of any installed fire protection device required by this Code or the *EPCOT Building Code*.

2507.5 Notice of Display. Any display of motor vehicles, watercraft or equipment with internal combustion engines shall require not less than 48 hours prior notification to the Reedy Creek Emergency Services Fire Prevention Division.

2507.6 All motor vehicles shall have the battery cables disconnected after placement is made. Fuel tanks shall have a locking cap or meet the approval of the Fire Official.

2507.7 Vehicles within a building shall not be left with the engine idling.

2507.8 All balloons or other inflatable objects shall be secured in such a way as not to block any fire protection devices.

PLACES OF ASSEMBLY

2507.9 Unusual conditions that are not covered by the requirements of this Section shall require approval by the Fire Official and the Building Official.

2507.10 Any material that is used as overhead covering for tables, booths or any entrance way shall be made of a permeable material or opened strip construction when installed inside a building.

CHAPTER 26

GENERAL PRECAUTIONS AGAINST FIRE

SECTION 2601 OPEN BURNING AND INCINERATORS

2601.1 Bonfires and Outdoor Rubbish Fires, Permit Required. No person shall kindle or maintain any bonfire or rubbish fire, or authorize any such fire to be kindled or maintained, without a permit or other proper authorization. During construction or demolition of buildings or structures, no waste materials or rubbish shall be disposed of by burning on the premises or in the immediate vicinity without having obtained a permit or other proper authorization.

2601.2 No person shall kindle or maintain any bonfire or rubbish fire, or authorize any such fire to be kindled or maintained, on any private land unless (1) the location is not less than 50 feet from any structure and adequate provision is made to prevent fire from spreading within 50 feet of any structure, or (2) the fire is contained in an approved waste burner located safely not less than 15 feet from any structure.

2601.3 Bonfires and rubbish fires shall be constantly attended by a competent person until such fire is extinguished. Such person shall have a garden hose connected to the water supply or other fire-extinguishing equipment readily available for use.

2601.4 Hot Ashes and Other Dangerous Materials. The Fire Official may prohibit any or all bonfires and outdoor rubbish fires when atmospheric conditions or local circumstances make such fires hazardous.

2601.5 No person shall deposit hot ashes or cinders, or smoldering coals, or greasy or oily substances liable to spontaneous ignition, into any combustible receptacle or place the same within 10 feet of any combustible materials, except in metal or other noncombustible, covered receptacles. Such receptacles, unless resting on a noncombustible floor or on the ground outside the buildings, shall be placed on noncombustible stands and in every case shall be kept at least 2 feet away from any combustible wall or partition, or exterior window opening.

2601.6 Types and Construction of Incinerators. Every incinerator used shall comply with the provisions of this Code.

2601.7 Commercial-, industrial- and apartment-type incinerators shall be constructed in accordance with the provisions of the *EPCOT Building Code* and the *EPCOT Mechanical Code*.

2601.8 Residential incinerators shall be of an approved type.

2601.9 Every incinerator shall be equipped with an effective means for arresting sparks.

2601.10 Every incinerator shall be constructed and maintained in accordance with the requirements of the Air Pollution Control District having jurisdiction, or shall comply with the requirements of NFPA 82.

2601.11 Kindling of Fire on Land of Others Restricted. No person shall kindle a fire upon the land of another without permission of the owner thereof or his agent.

2601.12 Incinerators in Trailer Camps. Any incinerator installed in a trailer camp, mobile home park or permanent camping park shall be of a type and in a location approved by the Fire Official.

2601.13 Restriction. If the Fire Official determines that burning in incinerators located within 500 feet of the mountainous, brush or grass-covered areas will create an undue fire hazard due to atmospheric conditions, such burning shall be prohibited.

2601.14 All burning shall take place during hours approved by the Fire Official.

2601.15 No waste matter shall be burned, under permit or otherwise, which will cause or create a dense smoke or odor.

SECTION 2602 FLAMMABLE AND COMBUSTIBLE MATERIALS

2602.1 Accumulations of Waste Materials. Roofs, courts, yards, vacant lots and open spaces shall be kept free and clear of deposits or accumulations of waste paper, hay, grass, straw, weeds, litter, combustible waste or rubbish of any kind. All weeds, grass, vines or other growth, when the same endangers property, or is liable to be fired, shall be cut down and removed by the owner or occupant of the property.

2602.2 All combustible rubbish, oily rags or waste material, when kept within a building, shall be securely stored in metal or metal-lined receptacles equipped with tight-fitting covers, or in rooms or vaults constructed of noncombustible materials.

2602.3 It shall be unlawful to accumulate or store combustible waste matter beneath trailers or at any other place within a trailer camp or mobile home park.

2602.4 Handling Readily Combustible Materials. No person making, using, storing, or having in charge or under his control any shavings, excelsior, rubbish, sacks, bags, litter, hay, straw or combustible waste materials shall fail or neglect at the close of each day to cause all such material, which is not compactly baled and stacked in an orderly manner, to be removed from the building or stored in suitable vaults or in metal-lined covered receptacles or bins. The Fire Official shall require suitable baling presses to be installed in stores, apartment buildings, factories and similar places where accumulations of paper or waste materials are not removed at least every second day.

2602.5 Storage of Readily Combustible Materials, Permit Required. No person shall store in any building or upon any premises in excess of 2,500 cubic feet gross volume of combustible empty packing cases, boxes, barrels or similar containers, rubber tires, baled cotton, rubber or cork, or other similarly combustible material, without a permit.

GENERAL PRECAUTIONS AGAINST FIRE

2602.6 Storage Requirements. Storage in buildings shall be orderly, and shall not be within 2 feet of the ceiling. It shall be separated from heaters or heating devices by an approved distance or shielded so that ignition cannot occur. It shall be located so as not to endanger exiting from the building. Storage in the open shall be compact and orderly, not be more than 20 feet in height, and be so located, with respect to adjacent buildings, as not to constitute a hazard.

2602.7 Hazardous Storage. Where the storage or accumulation of combustible waste matter, used in stores, apartment buildings, factories or other similar places, is a hazard or menace of fire, said storage of such materials shall be removed at least every second day.

2602.8 No storage of readily combustible materials shall be permitted in rooms containing gas-fired appliances or equipment.

SECTION 2603 FLAMMABLE DECORATIVE MATERIALS

2603.1 Decorative Material. Natural, artificial or manufactured decorative material, such as cotton batting, straw, dry vines, leaves, trees or other highly flammable materials, shall not be used for decorative purposes in show windows or other parts of commercial, industrial or institutional occupancies unless flameproofed; provided, however, that nothing in this Section shall be held to prohibit the display of saleable goods permitted and offered for sale. Electric light bulbs in such occupancies shall not be decorated with paper or other combustible materials unless such materials shall first have been rendered flameproof.

2603.2 No decorative material shall be used or applied that will ignite or allow flame to spread over the surface when exposed to a match flame test applied to a piece removed from the material and tested in a safe place. The piece shall be exposed to a flame from a match and held in a horizontal position $\frac{1}{2}$ inch underneath the piece, and at a constant location for a minimum of 15 seconds.

2603.3 Treatments used to accomplish flameproofing shall be renewed as often as may be required to maintain the flameproofed effect.

2603.4 Pyroxylin-Coated Fabric. Pyroxylin-coated fabric used as a decorative material, in accordance with Chapter 7, or a surface covering on fixed furnishings, shall be limited in amount to the following:

- (a) Such fabrics containing 1.4 ounces or more of cellulose nitrate per square yard shall not be used in excess of a total amount equivalent to 1 square foot of fabric surface to 15 cubic feet of room volume. Each square foot of such fabric, which contains 1.7 ounces or more of cellulose nitrate per square yard, shall be counted as 2 square feet in making this computation.
- (b) May be measured by folding a piece to five thicknesses and measuring to see if the thickness of five layers exceeds $\frac{1}{8}$ inch.

2603.5 Open Flame or Light Restricted. No person shall take an open flame or light into any building, barn, vessel, boat, or any other place where highly flammable, combustible or explosive material is kept, unless such light or flame shall be well secured in a glass globe, wire mesh cage or similar approved device.

2603.6 No heating or lighting apparatus or equipment capable of igniting flammable materials of the types stored or handled shall be used in the storage area of any warehouse storing rags, excelsior, hair, or other highly flammable or combustible material; nor in the work area of any shop or factory used for the manufacture, repair or renovating of mattresses or bedding; nor in the work areas of any establishment used for the upholstering of furniture.

2603.7 Any person using a torch or other flame-producing device for removing paint from any building or structure shall provide one approved fire extinguisher or water hose connected to a water supply in the area where such burning is done. In all cases, a firewatch shall remain on the premises for 1 hour after the torch or flame-producing device has been used.

2603.8 Any person using a torch or other flame-producing device for sweating pipe joints in any building or structure shall have available in the immediate vicinity where the sweating is done one approved fire extinguisher or water hose connected to a water supply. Combustible material in the close proximity of the flame shall be protected against ignition by shielding, wetting or other approved means. In all cases, a firewatch shall remain in the vicinity of the sweating operation for $\frac{1}{2}$ hour after the torch or flame-producing device has been used.

2603.9 Matches, Permit Required. No person shall manufacture matches without a permit. No person shall store matches exceeding in aggregate 25 cases of matches without a permit.

2603.10 Wholesale Storage. At wholesale establishments and wherever matches exceeding 25 cases are stored, shipping containers containing matches shall be arranged in piles not exceeding 18 feet in height, nor 25,000 cubic feet in volume. Such pile units shall be separated from each other and from other combustible material by a clear space of not less than 4 feet. In storage rooms where shipping containers containing matches are open, the broken containers and contents shall be neatly piled with other match stock in a portion devoted to match storage exclusively.

2603.11 Asphalt Kettles. It shall be unlawful to transport or permit to be transported any asphalt kettle beneath which is maintained any open fire, heated coals or ashes over any highway, road or street. Asphalt kettles shall not be used inside of or on the roof of any building. There shall be at least one approved fire extinguisher of a minimum 20BC classification within 30 feet of each asphalt kettle during the period such kettle is in use, and one additional 20BC classification fire extinguisher on the roof being covered.

2603.12 Asphalt kettles shall be maintained in a clean and safe operating condition.

SECTION 2604 FIRE REPORTING AND FALSE ALARMS

2604.1 Reporting of Fires. In the event a fire occurs on any property, the owner or occupant shall immediately report such fire to the Fire Department.

2604.2 A fire shall mean any fire not used for cooking, heating, recreational purposes or one not incidental to the normal operations of the property.

2604.3 False Alarms. For the purpose of this Chapter, a false alarm shall be deemed and construed as being any act of giving, signaling or transmission to any public fire station, company, officer or employee thereof, whether by telephone, spoken word or otherwise, information to the effect that there is a fire at or near the place indicated by the person giving, signaling or transmitting such information.

2604.4 It shall be unlawful for any person to give, signal or transmit; or for any person to cause or permit to be given, signaled or transmitted, in any manner, a false alarm.

2604.5 It shall be unlawful for any person to tamper with or maliciously damage any fire alarm equipment maintained for the purpose of transmitting fire alarms to the Fire Department.

2604.6 Nothing in this Section shall prohibit the sounding of any such signal essential for the carrying on of any fire drill.

SECTION 2605 USE OF EQUIPMENT, APPLIANCES, DEVICES AND VACANT BUILDINGS

2605.1 Heating Appliances. Heating appliances shall be listed by the AGA or other recognized testing agency. The heating element or combustion chamber in any such appliance shall be permanently guarded so as to prevent accidental contact by any person or material.

2605.2 Gas appliances shall be connected to the gas supply by approved connectors in compliance with the *EPCOT Mechanical Code* and the *EPCOT Fuel Gas Code*®.

2605.3 Gas appliances shall be vented to approved flues in compliance with the *EPCOT Mechanical Code* and the *EPCOT Fuel Gas Code*.

2605.4 Heating appliances shall be installed and maintained with clearance from combustibles in compliance with the *EPCOT Mechanical Code*.

2605.5 Chimneys and Heating Appliances. All chimneys, incinerators, smokestacks or similar devices for conveying smoke or hot gases to the outer air and the stoves, furnaces, fireboxes or boilers to which they are connected shall be constructed in accordance with the *EPCOT Mechanical Code* and the *EPCOT Building Code*, and maintained in such a manner as not to create a fire hazard.

2605.6 Existing masonry chimneys that, upon inspection, are found to be without a flue liner, or with open or cracked mortar joints, that will permit smoke or gases to be discharged into the building, which might create a dangerous condition, shall be made safe by means of a fire clay liner, fire brick, corrosion-resistant metal pipe or other repairs, or the chimney shall be removed. Metal pipe liners shall be 1 inch less in

diameter than the least dimension of the flue and entire space between the metal liner and the walls of the chimney filled with cement mortar.

2605.7 Existing chimneys and vents of metal that are corroded or improperly supported shall be replaced, unless suitable repairs are made.

2605.8 Exhaust systems provided for restaurant cooking equipment shall be maintained in a manner such as not to create a hazardous condition.

2605.9 Hoods, grease removal devices, fans, ducts and other devices shall be inspected periodically and cleaned as needed to remove grease and deposits of residues.

2605.10 Fire-extinguishing systems shall be inspected periodically and checked for proper operation. These inspections shall include a check that the supply of extinguishing agent in the system is adequate, and all actuation components are operating satisfactorily. Fusible links, if employed, shall be replaced or properly cleaned. Instructions for manually operating the system shall be posted conspicuously in the kitchen and employees checked for their knowledge of procedures.

2605.11 Any fire dampers shall be tested periodically to insure proper functioning of all parts.

2605.12 Trapdoors To Be Closed. All trapdoors and scuttle covers, except those that are automatic in their operation, in any building other than a dwelling, shall be kept closed at all times.

2605.13 Shaftways To Be Marked. Every outside window in a building used for manufacturing purposes or for storage, which opens directly on any hoistway or other vertical means of communication between two or more floors in such buildings, shall be plainly marked with the word "SHAFTWAY" in red letters at least 6 inches high on a white background; such warning sign to be so placed as to be easily discernible from the outside of the building. Every door or window opening on such shaftway from the interior of the building, unless the construction of the partition surrounding the shaftway is of such distinctive nature as to make its purpose evident at a glance, shall be similarly marked with the warning word "SHAFTWAY" so placed as to be easily visible to anyone approaching the shaftway from the interior of the building.

2605.14 Electrical Wiring. It shall be unlawful to maintain any electrical wiring appliance, apparatus or device in violation of the *EPCOT Electrical Code*.

2605.15 Hazardous Warning Lights. It shall be unlawful to maintain any device utilizing an open flame along any excavation, road or any place where the dislodgement of such device might permit the same to roll, fall, or slide on to any forest or any land containing flammable material.

2605.16 Vacant Structures. Every person owning, or in charge or control of, any vacant building shall remove therefrom all accumulations of flammable or combustible waste or rubbish, and shall securely lock, barricade or otherwise secure all doors, windows and other openings thereof. The premises shall be maintained clear of any waste or hazardous material.

2605.17 Fire Walls, Fire Doors. Fire walls, fire stops, and fire-rated partitions and floors required by the *EPCOT Building Code* shall be maintained. All openings made therein for the passage of pipes, electrical and the like, and holes made for any reason shall be sealed with approved noncombustible material to protect against the passage of smoke and fire. All openings through these partitions (i.e., access doors) shall be protected by self-closing or automatic doors of approved construction meeting the partition requirements.

2605.18 Where necessary, because of the nature of the occupancy or violation of Subsection 2605.17, the Fire Official may require signs on the partition reading substantially as follows: "FIRE AND SMOKE BARRIER—PROTECT ALL OPENINGS."

2605.19 All fire and smokestop doors shall be kept in operable condition. No fire door may be blocked or obstructed, or otherwise made inoperable. Fusible links shall be replaced promptly whenever fused or damaged.

2605.20 Fire doors designed to be kept normally open shall be marked: "FIRE DOOR—DO NOT BLOCK." Fire doors designed to be kept normally closed (such as stairwell doors) shall be marked: "FIRE DOOR—KEEP CLOSED."

2605.21 Hold-open devices and automatic door closers, where provided, shall be maintained. During the period that any such device is out of service for repairs, the door it operates shall remain in the closed position.

SECTION 2606 FIRE PROTECTION SYSTEMS

2606.1 Sprinkler System Out of Service. No sprinkler system in amusement ride or assembly occupancies shall be taken out of service for alterations when occupied by the public. No sprinkler system affecting water spray kitchen systems shall be taken out of service when the kitchen is occupied.

2606.2 All other occupancies may be permitted to take the sprinkler system out of service with the Fire Official's approval.

2606.3 Standby Firewatch Required. When any sprinkler system is taken out of service for alterations or repair, a standby firewatch shall be required.

2606.4 Standby firewatch is defined as a person or persons who are assigned the dedicated task of roving patrol for the sole purpose of detecting fire, sounding the necessary alarm, and confining and/or extinguishing fire.

2606.5 All standby firewatch personnel shall be subject to the Fire Official's directions and supervision at all times when so employed.

2606.6 Fire Protection Systems, Kitchens. Approved fire-extinguishing equipment shall be provided for the protection of cooking equipment, duct systems, grease removal devices and hoods.

2606.7 For the purpose of this Section, a sprinkler system is an approved automatic fire-extinguishing system for the protection of duct systems, grease removal devices, hoods or cooking equipment.

2606.8 The extinguishing equipment shall be an automatic system specifically listed for the hazard. Listed fire-extinguishing systems shall be installed in accordance with the terms of their listing and the manufacturer's installation instructions.

2606.9 Complete drawings of the system installation, including the hood(s), exhaust duct(s) and appliances, along with the interface of the fire-extinguishing system detectors, piping, nozzles, fuel shutoff devices, agent storage container(s) and manual actuation device(s), shall be submitted to the Fire Official.

2606.10 Fire Prevention Code Section. The Fire Prevention Division of Reedy Creek Emergency Services shall perform a final inspection during which a full function test of the kitchen fire protection system shall be witnessed. All annual and semi-annual kitchen fire protection inspections shall be witnessed by the Fire Protection Division of Reedy Creek Emergency Services.

2606.11 Kitchen hood exhaust fans shall continue to operate when the surface fire protection system operates, either manually or automatically. Internal makeup air shall shut down.

2606.12 Water Mist Fire Protection Systems. Water mist fire protection systems shall shut off the gas and/or electric to all cooking equipment if incoming water pressure falls to 40 pounds per square inch (psi) or below.

2606.13 Kitchen Hood System Interlock. When the ventilating hood or exhaust system is equipped with a power means of exhaust, the appliance control system shall be so interlocked as to permit appliance operation only when the power means of exhaust is in operation. (See Subsection 610.4 of the *EPCOT Fuel Gas Code*.)

2606.14 Water Mist Suppression Systems. Water mist systems shall be required as part of the fire suppression system for all solid fuel cooking appliances.

2606.15 Extinguishing Equipment. Additional fire-extinguishing equipment for solid fuel-burning cooking appliances shall be comprised of water-based agents in accordance with Chapter 11 of NFPA 96.

2606.16 Fog Systems. All water (fog) systems shall have one head per heat rating available in the panel in case of discharge.

2606.17 All closed-head water mist fire protection systems shall have a test drain at the end of each system. This test drain shall be accessible without reaching or climbing over cooking equipment. The test drain shall drain directly into a drain and shall flow the equivalent of one head.

2606.18 Hoods, grease removal devices, fans, ducts and other appurtenances shall be cleaned to bare metal at frequent intervals prior to the surface becoming heavily contaminated with grease or oily sludge. After the exhaust system is cleaned to bare metal, it shall not be coated with powder or other substance.

2606.19 When a vent cleaning service is used, a certificate showing the date of inspection or cleaning shall be maintained on the premises.

2606.20 Flammable solvents or other flammable cleaning aids shall not be used.

2606.21 At the start of the cleaning process, electrical switches that could be accidentally activated shall be locked out.

2606.22 Components of the fire suppression system shall not be rendered inoperable during the cleaning process.

2606.23 Fusible links or detection devices of the automatic-extinguishing system shall not have any foreign substance applied that may alter the effective temperature range of the fusible link or device.

2606.24 When cleaning procedures are completed, all electrical switches and system components shall be returned to an operable state. All access panels (doors) and cover plates shall be replaced. Dampers and diffusers shall be positioned for proper airflow.

2606.25 Fire Protection Systems, Other. Approved fire-extinguishing equipment shall be provided for the protection of hazards that are not protected by a sprinkler system or a pre-action sprinkler system as approved by the Fire Official and the Building Official.

2606.26 Commercial Kitchen Hoods. All hood-extinguishing systems shall connect directly to the building fire alarm control panel. Actuation of the hood-extinguishing system shall result in a fire summary alarm output. In addition, the alarm output for a water-based system shall be identified as an FOG, and the alarm output for a chemical-based system shall be identified as a WCE.

2606.27 The extinguishing equipment shall be an automatic system specifically listed for the hazard. Listed fire-extinguishing systems shall be installed in accordance with the terms of their listing and manufacturer's installation instruction.

2606.28 For the purpose of this Section, a Halon system is not approved for the protection of a structure and shall not be installed in lieu of a sprinkler system or a pre-action sprinkler system.

2606.29 Complete drawings of the system installation shall be submitted to the Fire Official for approval.

SECTION 2607

LAND CLEARING AND AGRICULTURAL BURNING

2607.1 Land Clearing. All burning for land clearing purposes shall be approved by the Fire Official or his authorized representative.

2607.2 Any special conditions required by the Fire Official shall be the responsibility of the person in charge of the burning operations.

2607.3 Agricultural. All burning for agricultural purposes shall be approved by the Fire Official or his authorized representative.

2607.4 Areas of agricultural burning shall have plowed fire breaks of sufficient number and size acceptable to the Fire Official.

2607.5 Any special conditions required by the Fire Official shall be the responsibility of the person in charge of the burning operation.

SECTION 2608 SMOKING

2608.1 Prohibition. Smoking shall mean and include the carrying of lighted pipe, cigar, cigarette, tobacco or any smoking substance in any form.

2608.2 Where conditions are such as to make smoking a hazard in any areas of piers, wharves, warehouses, stores, industrial plants, institutions, schools, places of assembly, or in open spaces where combustible materials are stored or handled, the Fire Official is empowered and authorized to order the owner or occupant, in writing, to post "NO SMOKING" signs in each building, structure, room or place in which smoking shall be prohibited. Such signs shall be conspicuously located. The Fire Official shall designate specific safe locations, if necessary, in any building, structure or place in which smoking may be permitted.

2608.3 It shall be unlawful for any person during that period of the year declared by the Fire Official as a hazardous season to light, ignite, or otherwise set fire to or to smoke any tobacco, cigarette, pipe or cigar in or upon any mountainous-, brush- or forest-covered land, or land covered with any flammable material, or upon any road or trail traversing any such mountainous-, brush- or forest-covered land, or land covered with flammable material; provided, however, that nothing in this Section shall apply to the area within the boundaries of any established smoking areas as designated by the Fire Official.

2608.4 It shall be unlawful to smoke in bed.

2608.5 "No Smoking" Signs. The lettering, size, color and location of legally required "NO SMOKING" signs shall be subject to the approval of the Fire Official.

SECTION 2609 CHRISTMAS DECORATIONS

2609.1 Live Christmas trees are permitted only if the tree is growing with its root system in a portable container, or if the base of a cut tree is immersed in water.

2609.2 Live decorations (centerpieces, table displays, etc.) shall be kept in a moist condition. Should they become dry and subject to ignition, they shall be removed immediately.

2609.3 String lights or any other electrical wiring shall not be placed on aluminum or metal-type trees.

2609.4 All lighting and other Christmas decorations that are electrically powered shall be listed or labeled by an approved testing laboratory.

CHAPTER 27

TENTS, AIR-SUPPORTED STRUCTURES AND TENSION MEMBRANE STRUCTURES

SECTION 2701 INSTALLATION REQUIREMENTS

2701.1 Affidavit of Compliance. Pole or frame tents 400 square feet in area or less installed for less than 90 days shall require an affidavit of compliance submitted to the Fire Prevention Division of Reedy Creek Emergency Services. The affidavit shall attest to compliance with NFPA 102 and be submitted a minimum of 48 hours prior to installation.

2701.2 Anchors. The method of anchoring the tent shall be submitted. Ballast-type anchors may be used with at least one, 75-pound or higher ballast per pole. Earth or stake anchors may be used where suitable.

2701.3 Permanent Installations. Permanent frame or pole installations, regardless of size, shall be permitted through the Department of Building and Safety.

2701.4 Pole, Frame or Clear Span Tents Greater Than 400 Square Feet. Temporary frame or clear span tents greater than 400 square feet, or permanent frame or clear span tents, shall be permitted through the Department of Building and Safety.

SECTION 2702 LOCATION

2702.1 Tents and Air-Supported Structures. A tent or air-supported structure shall be so located from any property line or permanent structure so as to be readily accessible by fire equipment.

2702.2 Tents or air-supported structures having an area of 15,000 square feet or more shall be located not less than 25 feet from any other tent or 50 feet from any other structure as measured from the sidewall of the tent. Tents of less than 15,000 square feet shall be located not less than 15 feet from any other tent or structure.

2702.3 Tents and air-supported structures may be joined together by means of corridors, but such corridors shall be open to the sky. On each side of such corridor and approximately opposite each other, there shall be provided openings not less than 12 feet in width. These openings shall be equipped with sliding curtains.

2702.4 An unobstructed passageway or fire road not less than 12 feet in width and free from guy ropes or other obstructions shall be maintained on all sides of all tents or air-supported structures, unless otherwise approved by the Fire Official.

SECTION 2703 STRUCTURAL STABILITY

2703.1 Tents or air-supported structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather against collapsing.

2703.2 Air-supported structures shall have the design and construction of the fabric envelope and the method of anchoring in accordance with *Minimum Performance Standards for Single-Walled Air-Supported Structures*, CPAI-71, published by the Air Structures Division of Canvas Products Association International.

2703.3 An air-supported structure used in a place of assembly shall be furnished with not less than two blowers, each of which has adequate capacity to maintain full inflation pressure with normal leakage.

2703.4 The design of the blower shall be so as to provide integral limiting pressure at the design pressure.

2703.5 Places of public assembly for more than 200 persons shall be furnished with either a fully automatic auxiliary engine-generator set capable of powering one blower continuously for 4 hours, or a supplementary blower powered by an internal combustion engine that will be automatic in operation.

SECTION 2704 FLAME-RETARDANT TREATMENT

2704.1 All tents, air-supported structures and tension membrane structures shall be of a flame-retardant material acceptable to the Fire Official and shall meet the requirements of NFPA 701.

2704.2 The Fire Official shall require a certificate or other evidence of acceptance by an organization acceptable to the Fire Official, attesting to the following information relative to the flame-retardant treatment of the fabrics:

- (a) Date fabric was last treated with flame-retardant solution.
- (b) Trade name or kind of chemical used in treatment.
- (c) The name of person or firm treating the material.
- (d) The name and address of the owners of the tent.

SECTION 2705 FIRE-RESISTIVE STANDARDS

2705.1 Fire-resistive standards shall be in accordance with the applicable provisions of the nationally recognized standards.

TENTS, AIR-SUPPORTED STRUCTURES AND TENSION MEMBRANE STRUCTURES

2705.2 Smoking shall not be permitted in any tent or air-supported structure. Approved “NO SMOKING” signs shall be conspicuously posted.

2705.3 No fireworks, open flame or other device emitting flame or fire shall be used in or immediately adjacent to any tent or air-supported structure while open to the public.

2705.4 Fire protection equipment shall be provided in every tent or air-supported structure and tension membrane structures in such numbers and sizes as required by the Fire Official.

SECTION 2706 EXITS

2706.1 Exit Requirements. See Chapter 8 of the *EPCOT Building Code* for exit requirements.

SECTION 2707 OCCUPANT LOAD AND SEATING

2707.1 The occupant load and seating arrangements shall be approved by the Fire Official.

2707.2 For occupant load and setting arrangements, see Sections 801 and 802 of the *EPCOT Building Code*.

2707.3 Heating and Cooking Equipment. Heating and cooking appliances, and equipment, shall not be installed in a tent or air-supported structure, except as permitted jointly by the Fire Department and the Department of Building and Safety, and shall comply with the requirements of the *EPCOT Mechanical Code*.

2707.4 Indirect heating equipment shall comply with Subsection 2707.3.

2707.5 Housekeeping. All weeds and flammable vegetation shall be removed from the premises adjacent to within 50 feet of any tent or air-supported structure.

2707.6 Hay, straw, trash and other flammable material shall not be stored less than 50 feet from any tent or air-supported structure.

2707.7 Membrane Structures. Permanent air-supported, air-inflated and tensioned membrane structures, collectively known as membrane structures, used as complete buildings and as roofs or other portions of buildings, or other types of construction, shall be as specified in the *EPCOT Building Code*.

2707.8 Temporary membrane structures erected for a period of less than 90 days shall comply with the applicable provisions of this Chapter.

SECTION 2708 OCCUPANCY

2708.1 Places of Assembly. For the purposes of this Chapter, places of assembly shall include any circus, carnival, tent show, theater, skating rink, dance hall, or other place of assembly in or under which persons may gather for any purpose.

CHAPTER 28

MECHANICAL REFRIGERATION

SECTION 2801 GENERAL

2801.1 Maintenance and Installation. All refrigeration systems shall be maintained in a clean manner, free from accumulations of oil, dirt, waste and other debris, and shall be kept easily accessible at all times.

2801.2 All new mechanical refrigeration systems shall be installed and all existing installations shall be maintained, in a standard safe manner that will minimize the life, health and fire hazard of the installation. Installation shall be in accordance with the provisions of the *EPCOT Mechanical Code*.

CHAPTER 29

WELDING AND CUTTING

SECTION 2901 CALCIUM CARBIDE AND ACETYLENE

2901.1 General. In performance of welding and cutting operations, only approved equipment, such as blowpipes, torches, regulators and acetylene generators that have been examined and tested and found to be safe guarded as far as practicable, shall be used.

2901.2 All cylinders or containers used for the storage of compressed gases shall be constructed, charged and marked in accordance with nationally recognized safe practices.

2901.3 Where provisions for welding and cutting are not covered by this Chapter, NFPA 51 shall govern.

SECTION 2902 PIPING OF OXYGEN AND FUEL GASES

2902.1 Except as otherwise provided in this Section, piping shall be of wrought-iron, steel, brass or copper pipe, or approved seamless copper, brass or other approved gas tubing. All piping and fittings for conveying gas or liquid at pressures up to 150 pounds per square inch (psi), shall be suitable for a safe working pressure of not less than 150 psi. For pressures in excess of 150 psi, extra heavy-duty pipe and fittings shall be used as a minimum. Joints in steel or wrought-iron pipe shall be welded, threaded or flanged. Fittings, such as ells, tees, couplings and unions, may be rolled, forged or cast steel, or malleable iron or nodular iron. Joints in brass or copper pipe shall be welded, threaded, brazed or flanged. Joints in seamless copper, brass or other approved non-ferrous gas tubing shall be made by approved tubing fittings or, if of the socket type, they shall be brazed with silver solder or similar high melting point material. Gray or white cast-iron fittings shall be prohibited. Threaded connections in oxygen piping shall be tinned or made up with other suitable joint sealer applied to the thread.

2902.2 Acetylene piping shall be steel or wrought-iron pipe.

2902.3 Oxygen piping shall be steel, wrought-iron, brass or copper pipe, or approved seamless non-ferrous gas tubing. Tubing shall be used only for pressures of 150 psi or less. Oxygen piping and fittings at pressures in excess of 700 psi shall be stainless steel or non-ferrous metal.

SECTION 2903 PIPING INSTALLATION

2903.1 Piping shall be run as directly as practicable, protected against corrosion and physical damage, and allowance made for expansion, contraction, jarring and vibration.

2903.2 Oxygen piping may be placed in the same tunnel, trench or duet with fuel gas pipelines, provided there is good natural or mechanical ventilation and there is no contact with other pipelines.

2903.3 Low points in piping carrying moist gas shall be drained into drip pots constructed so as to permit pumping or draining out the condensate at necessary intervals. Drain valves shall be installed for this purpose having outlets normally closed with screw caps or plugs. Open-end valves or petcocks shall not be used; except that in drips located outdoors and underground and not readily accessible, valves may be used at outlets if they are equipped with means to secure them in the closed position. Pipes leading to the surface of the ground shall be cased or jacketed where necessary to prevent loosening or breaking.

2903.4 Readily accessible gas valves shall be provided to shut off the gas supply to buildings in cases of emergency. A shut-off valve shall be installed in the discharge from the generator, gas holder, manifold or other source of supply.

2903.5 Fittings and lengths of pipe shall be examined internally before assembly and free of scale or dirt. Oxygen piping and fittings shall be washed out with a suitable solution that will effectively remove grease and dirt, but will not react with oxygen.

2903.6 Piping shall be thoroughly blown out after assembly to remove foreign materials. For oxygen piping, oil-free air or oil-free nitrogen shall be used. For other piping, air or inert gas may be used.

2903.7 Underground pipe and tubing and outdoor ferrous pipe and tubing shall be covered or painted with a suitable material for protection against corrosion.

2903.8 Above-ground piping system shall be marked in accordance with ANSI A13.1, *Scheme for Identification of Piping Systems*.

2903.9 Station outlets shall be marked to indicate their intended usage.

2903.10 Signs clearly establishing the location and identity of section shutoff valve shall be provided.

2903.11 Piping systems shall be tested and proved gas tight at 1½ times the maximum operating pressure, and shall be thoroughly purged of air before being placed in service. The material used for testing oxygen lines shall be oil free and non-flammable. Flames shall not be used to detect leaks.

2903.12 When combustible gas lines or other parts of equipment are being purged of air or gas, sources of ignition shall not be permitted near uncapped openings.

SECTION 2904 MANIFOLDING OF CYLINDERS

2904.1 Oxygen manifolds shall not be located in an acetylene generator room, or in close proximity to cylinders of combustible gases. Oxygen manifolds shall be located away from highly flammable material.

2904.2 The aggregate capacity of fuel gas cylinders connected to one manifold inside a building shall not exceed 3,000 cubic feet of gas or 300 pounds in the case of LP gas. More than one such manifold, each supplying blowpipe or one machine, may be located in the same room if separated at least 50 feet.

2904.3 Where it is necessary to manifold fuel gas cylinders having an aggregate gas capacity in excess of 3,000 cubic feet, they shall be located outside, in a special building or in a separate room constructed in accordance with the provisions of Subsection 2906.19.

SECTION 2905 STORAGE

2905.1 Cylinders. Cylinders of fuel gases stored inside a building, except those in actual use or attached ready for use, shall be limited to a total capacity of 3,000 cubic feet (250 pounds of LP gas). Storage exceeding this amount shall be in a separate room as provided for by Subsection 2906.18, or cylinders shall be kept outside or in a special building. Buildings, rooms or compartments provided for such storage shall be well ventilated and be without open-flame heating or lighting devices.

2905.2 Cylinders stored inside of buildings shall be away from highly combustible materials and in locations where they are not subject to excessive rise in temperature, mechanical injury or tampering. All cylinders, including empty ones, shall have their caps in place and all valves tightly closed.

2905.3 Liquid Oxygen. Where liquid oxygen in a quantity exceeding 100 gallons is to be used for welding and cutting, the containers shall be located outside or in special building having no other occupancy.

2905.4 Hose and Hose Connections. Hose for oxygen and fuel gas service, including hose used to connect portable outlet headers to service piping, shall comply with the IAA-RMA, *Specification for Rubber Welding Hose*.

Note: The generally recognized colors are red for acetylene and other fuel gas hose, green for oxygen hose, and black for inert gas or air hose.

2905.5 When parallel lengths of oxygen and fuel gas hose are taped together for convenience and to prevent tangling, there shall be at least 1 foot between taped sections and the taped section shall be not more than 2 inches in length.

2905.6 Metal-clad or armored hose shall not be used, except as part of a machine or appliance when conditions of use make metal reinforcing advantageous, provided the metal reinforcing is internal and is not exposed on the inside or the outside of the hose.

2905.7 Hose connections shall comply with IAA, *Standard Hose Connection Specifications*.

2905.8 Hose connections shall be clamped or otherwise securely fastened in a manner that will withstand, without leaking, twice the pressure to which they are normally subjected, but not less than a pressure of 300 pounds per square inch gauge (psig).

2905.9 Hose shall be inspected frequently for leaks, burns, worn places, loose connections or other defect that may render the hose unfit for service. When hose shows excessive wear or has been subjected to a flash back, it shall be inspected and tested before being returned to service, at twice the normal pressure to which it is subjected in service, but not less than 200 psig. Defective hose shall be destroyed.

2905.10 Equipment shall be handled safely and used so as not to endanger lives and property.

2905.11 A listed flame arrester check valve shall be installed in every fuel gas hose not more than 6 inches downstream from the point of connection to a cylinder or other fuel supply, preferably at the regulator. Any such flame arrester shall be approved for the specific fuel gas used.

SECTION 2906 FIRE PREVENTION PRECAUTIONS

2906.1 Cutting or welding shall be permitted only in areas that are or have been made firesafe [see Subsection 2906.10(c)]. Within the confines of an operating plant or building, cutting and welding shall be done in a specific area designed or approved for such work. Such areas shall be of noncombustible or fire-resistive construction, free of combustible and flammable materials, and suitably segregated from adjacent areas. When work cannot be moved practically, the area shall be made fire safe by removing combustibles or protecting combustibles from ignition sources.

2906.2 Cutting or welding shall not be permitted in the following situations:

- (a) In unauthorized areas.
- (b) In sprinklered building while such protection is impaired.
- (c) In the presence of explosive atmospheres (mixtures of flammable gases, vapors liquids or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment that have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts. (See NFPA 327 and AWS A6.0, *Safety Practices for Welding and Cutting Containers That Have Held Combustibles*.)
- (d) In areas near the storage of large quantities of exposed, readily ignitable materials, such as bulk sulfur, baled paper or cotton.

2906.3 Before cutting or welding, the area shall be inspected by the individual responsible for authorizing cutting and welding operations to insure that it is a fire-safe area free of combustible materials, such as paper clippings, wood shavings or textile fibers, on the floor. The floor shall be swept clean for a radius of 35 feet.

2906.4 Where practicable, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impracticable, combustibles shall be protected with flame-proofed covers or otherwise shielded with metal guards or curtains.

2906.5 Wall or floor openings or cracks within 35 feet of the site shall be tightly covered to prevent the passage of sparks to adjacent areas.

2906.6 Ducts and conveyor systems that may carry sparks to distant combustibles shall be suitably protected or shut down.

2906.7 Where cutting or welding is done near walls, partitions, ceilings or roofs of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition. If welding is to be done on a metal wall, partition, ceiling or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferably by relocating combustibles. Where combustibles are not relocated, a firewatch on the opposite side from the work shall be provided. Welding shall not be attempted on a metal partition, wall, ceiling or roof having a combustible covering, nor on walls of partitions of combustible sandwich-type panel construction.

2906.8 Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.

2906.9 Portable fire extinguishers, appropriate for the type of possible fire, shall be concentrated at the work area. Where hose lines are available, they shall be connected and ready for service.

2906.10 A firewatch shall be required by the individual responsible for authorizing cutting and welding whenever cutting or welding is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

- (a) Appreciable combustible material in building construction or contents closer than 35 feet to the point of operation.
- (b) Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas, including concealed spaces in walls or floors.
- (c) Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings or roofs, and are likely to be ignited by conduction or radiation.

2906.11 A firewatch shall have fire-extinguishing equipment readily available and be trained in its use.

2906.12 A firewatch shall be familiar with facilities for sounding an alarm in the event of a fire.

2906.13 A firewatch shall watch for fires in all exposed areas, and try to extinguish them first only when obviously within the capacity of the equipment available, or otherwise sound the alarm.

2906.14 A firewatch shall be maintained for at least $\frac{1}{2}$ hour after completion of cutting or welding operations to detect and extinguish possible smoldering fires.

2906.15 Where a firewatch is not required, a final check-up shall be made $\frac{1}{2}$ hour after the completion of cutting or welding operations to detect and extinguish possible smoldering fires.

2906.16 "Hot tapping" or other cutting or welding on a flammable gas or liquid transmission or distribution utility pipeline shall be performed by a crew qualified to make hot taps. For a gas pipeline, see Section 841.28 of ANSI B31.8, *Gas Transmission and Distribution Piping Systems*.

2906.17 Containers for Calcium Carbide. Containers used for the storage of calcium carbide shall be of metal of sufficient strength to insure handling without rupture, and shall be provided with a screw top or its equivalent. They shall be of water-tight construction. Solder shall not be used on joints in such a manner that fire would disrupt the package. Packages shall be marked: "CALCIUM CARBIDE—DANGEROUS IF NOT KEPT DRY."

2906.18 Storage of Calcium Carbide in Buildings. Storage of calcium carbide inside buildings shall be in a dry, waterproof and well-ventilated location.

2906.19 Calcium carbide in excess of 600 pounds shall not be stored in a building containing other occupancies unless in an acetylene generator room or separate room, in a one-story building without a cellar or basement underneath the carbide storage section. Such rooms shall be separated from the rest of the building by a 1-hour occupancy separation constructed as specified in the *EPCOT Building Code*. The room or compartments may also be used for storage of fuel gas cylinders, but not oxygen. Adequate ventilation shall be provided.

2906.20 Calcium carbide in excess of 5,000 pounds shall be stored either in one-story buildings, without a cellar or basement and used for no other purpose except the storage of fuel gas cylinders, or in outside acetylene generator houses. Locations of such storage buildings shall be approved by the Fire Official and shall comply with the requirements of the *EPCOT Building Code* for a hazardous occupancy.

SECTION 2907 GENERATORS

2907.1 Acetylene generators shall be of an approved type, and shall be plainly marked with the rate in cubic feet of acetylene per hour for which they are designed, the amount of weight of carbide necessary for a single charge, the manufacturer's name and address, and the name or number of the type of generator.

2907.2 Stationary generators shall be installed in a well-ventilated room located in one-story buildings, or on the top floor or roof of multistory buildings. Such rooms shall be separated from the rest of the building by a 1-hour occupancy separation constructed as specified in the *EPCOT Building Code*. At least one wall of a generator room shall be an exterior wall.

2907.3 Approved explosion venting shall be provided in exterior walls or roofs. The venting area shall be not less than 1 square foot per 50 cubic feet of room volume.

2907.4 The storage of fuel gas cylinders in such rooms shall not exceed a total capacity of 2,000 cubic feet of gas, or a total water capacity of 735 pounds of LP gas or methylacetylene-propadiene stabilized.

WELDING AND CUTTING

2907.5 Portable generators shall not be used in rooms having a total volume less than 35 times the total gas-generating capacity per charge of all generators in the room. The gas-generating capacity, in cubic feet per charge, shall be assumed as $4\frac{1}{2}$ times the weight of carbide per charge in pounds. Generators shall not be used in rooms having a ceiling height less than 10 feet.

CHAPTER 30

MANUFACTURE OF ORGANIC COATINGS

SECTION 3001 GENERAL

3001.1 Scope. This Chapter shall apply to (1) processes manufacturing protective and decorative finishes or coatings (paints) for industrial, automotive, marine, transportation, institutional, household or other purposes; and (2) the handling of flammable and combustible liquids, certain combustible solids and potential dust explosion conditions.

3001.2 This Chapter shall not apply to (1) processes manufacturing non-flammable or water-thinned coatings, or (2) operations applying coating materials.

3001.3 Definition.

- (a) **Organic Coating.** A liquid mixture of binders, such as alkyd, nitrocellulose, acrylic or oil, and flammable and combustible solvents, such as hydrocarbon, ester, ketone or alcohol, which, when spread in a thin film, convert to a durable protective and decorative finish.

3001.4 Location. Manufacturing of organic coatings shall be done only in buildings meeting the requirements of a hazardous occupancy as specified in the *EPCOT Building Code*. Such buildings shall have no pits or basements, and shall be provided with approved explosion venting facilities.

3001.5 An organic coating manufacturing operation shall not be located in the same building with other occupancies. Operations incidental to or in connection with organic coating manufacturing shall not be classed as "other occupancies" for the purpose of this Subsection.

3001.6 An organic coating manufacturing operation shall be accessible from at least one side for the purpose of fire control.

3001.7 Where topographical conditions are such that flammable and combustible liquids may flow from the organic coating manufacturing operation so as to constitute a fire hazard to properties of others, drainage facilities shall be provided in accordance with Subsection 3002.3.

3001.8 Enclosed buildings in which Class I liquids are processed or handled shall be ventilated at a rate of not less than $\frac{1}{2}$ cubic foot per minute per square foot of solid floor area. This shall be accomplished by exhaust fans taking suction at floor levels and discharging to a safe location outside the building. Provisions shall be made for the introduction of non-contaminated intake air in such a manner that all portions of solid floor areas will be subject to continuous distributed movement of air.

3001.9 Ignition sources, such as open flames, or electrical heating elements, except as provided in Subsection 3005.7, shall not be used within the building.

SECTION 3002 STORAGE

3002.1 Raw Materials and Finished Products. The storage, handling and use of flammable and combustible liquids shall be in accordance with Chapter 16.

3002.2 Tank storage for flammable and combustible liquids inside of buildings shall be permitted only in storage areas at or above grade that are separated from the processing area by a 2-hour occupancy separation constructed as specified in the *EPCOT Building Code*. This is not intended to prevent processing equipment from containing flammable and combustible liquids or storage in such quantities as are essential to the continuity of operations.

3002.3 Tank car and tank vehicle loading and unloading stations for Class I liquids shall be separated from the processing area, other plant buildings, nearest line of adjoining property that may be built upon, or public thoroughfare by a clear distance of not less than 25 feet.

3002.4 Loading and unloading structures and platforms for flammable and combustible liquids shall be designed and installed in accordance with Chapter 16.

3002.5 Tank cars for flammable liquids shall be unloaded so as to be reasonably safe to persons and property.

3002.6 Tank vehicles for flammable and combustible liquids shall be loaded and unloaded in accordance with Chapter 16.

3002.7 Finished products that are flammable or combustible liquids shall be stored outside of buildings, or in a separate building, or in a separate room separated from the processing area by a 2-hour occupancy separation constructed as specified in the *EPCOT Building Code*. The storage of finished products shall be in tanks or in closed containers in accordance with Chapter 16.

3002.8 The nitrocellulose storage area shall be in a separate building or in a room that is separated from the processing area by a 2-hour occupancy separation constructed as specified in the *EPCOT Building Code*. The nitrocellulose storage shall be used for no other purpose. Electrical wiring equipment shall be installed in accordance with the *EPCOT Electrical Code*.

3002.9 Nitrocellulose shall be stored only in closed containers. Barrels shall be stored on end and, if tiered, not more than two high. Barrels or other containers of nitrocellulose shall not be opened in the main storage building, but at the point of use or other location set aside for this purpose.

3002.10 Spilled nitrocellulose shall be promptly wetted with water and disposed of by use or by burning in the open at a suitable detached location.

3002.11 The storage of organic peroxides shall be in accordance with Chapter 19.

3002.12 The size of the package containing the organic peroxide shall be selected so that, as nearly as practical, full packages are utilized at one time. Any peroxide spilled shall be promptly cleaned up and disposed of as recommended by the supplier.

3002.13 Drainage Facilities. Drainage facilities shall be provided to direct flammable and combustible liquid leakage and fire protection water to a safe location away from the building, any other important value or adjoining property.

3002.14 Process Mills, Mixers and Kettles. Mills operating with close clearances, and used for the processing of flammable and heat-sensitive materials, such as nitrocellulose, shall be located in a detached building or in a noncombustible structure without other occupancies. The amount of nitrocellulose or other flammable material brought into the area shall be no more than that required for a batch.

3002.15 Mixers shall be of the enclosed type or, if of the open type, shall be provided with properly fitted covers. Where gravity flow is used, a shutoff valve shall be installed as close as practical to the mixer and a control valve shall be provided near the end of the fill pipe.

3002.16 Open kettles shall be located in an outside area, provided with a protective roof or in a separate building of noncombustible construction, or separated from other areas by a 2-hour occupancy separation constructed as specified in the *EPCOT Building Code*.

3002.17 The vaporizer section of heat transfer systems heating closed kettles containing solvents shall be remotely located. Contact heated kettles containing solvents shall be equipped with safety devices that, in case of fire, turn the process heat off, turn the cooling medium on and inject inert gas into the kettle.

3002.18 The kettle and thin-down tank shall be instrumented, controlled and interlocked so that any failure of the controls will result in a safe condition. The kettle shall be provided with a pressure rupture disc in case the normal vent becomes inoperative. The vent piping from the rupture disc shall be of a minimum length and shall discharge to a safe location. The thin-down tank shall be adequately vented. Thinning operations shall be provided with an adequate vapor removal system.

SECTION 3003 PIPING

3003.1 Process Piping. All piping, valves and fittings shall be designated for the working pressures and structural stresses to which they may be subjected. They shall be of steel or other material approved for the service intended.

3003.2 Valves Shall Be of an Indicating Type. Terminal valves on remote pumping systems shall be of the "dead-man" type, which will shut off both the pump and the flow of solvent.

3003.3 Piping systems shall be substantially supported and protected against physical damage. Piping shall be pitched to

avoid unintentional trapping of liquids or suitable drains shall be provided.

3003.4 Approved flexible connectors may be used where vibration exists or where frequent movement is necessary. Approved hose shall be used at dispensing stations.

3003.5 Before being placed in service, all piping shall be free of leaks when tested to not less than 1½ times the working pressure or a minimum of not less than 5 pounds per square inch gauge at the highest point in the system. Tests shall continue for a minimum of 30 minutes.

SECTION 3004 TRANSFERS

3004.1 Flammable and Combustible Liquids in Process Areas. The transfer of large quantities of flammable and combustible liquids shall be through piping by means of pumps. The use of compressed air as a transfer medium shall be prohibited.

3004.2 Pumps shall be selected for the flammable and combustible liquid used, the working pressures and the structural stresses to which they may be subjected.

3004.3 Where solvents are pumped from storage to points of use, approved switches shall be provided in the processing areas and at the pump to shut down the pumps in case of fire.

3004.4 Empty and filled containers shall be stored outside the filling area.

SECTION 3005 PROCESS AREAS

3005.1 Raw Materials. The amount of nitrocellulose brought into the operating area shall not exceed that required for a shift. Any nitrocellulose that may be spilled on the floor or elsewhere shall be promptly swept up, put into a pail of water, and removed at the end of the day or shift and disposed of by use or by burning in the open at a suitable detached location.

3005.2 Organic peroxides brought into the operating areas shall be in the original shipping container and shall not exceed the quantity required for a shift. When in the operating area, the peroxide shall not be placed in locations exposed to ignition sources, heat or mechanical shocks.

3005.3 Electrical Equipment. All electrical wiring and equipment shall comply with the *EPCOT Electrical Code*.

3005.4 Where Class I liquids are exposed to the air, the design of equipment and ventilation of buildings shall be such as to limit the Class I locations to pits, the interior of equipment, and the "immediate vicinity" of pumps or equipment locations, such as dispensing stations, open centrifuges, plate and framer filters, opened vacuum filters, change cans, and the surfaces of open equipment. Immediate vicinity means a zone extending from the vapor liberation point 20 feet horizontally in all directions and vertically from the floor to a level 6 feet above the highest point of vapor liberation.

3005.5 All locations not covered by Subsection 3005.4, where Class I liquids are handled, shall be Class I, Division 2. If the flash point of the liquid processed is higher than ambi-

ent temperature and at least 100°F, ordinary electrical equipment may be used, though care shall be used in locating electrical apparatus to prevent hot metal from falling into open processing equipment.

3005.6 Ordinary electrical equipment, including switch gear, may be used if installed in a room that is maintained under positive pressure with respect to the hazardous area. Air or other media for pressurizations shall be taken from a location where entrainment of flammable vapor is improbable.

3005.7 Protection Against Static Electricity and Lightning. All equipment, such as tanks, machinery and piping, where an ignitable mixture may be present, shall be bonded and connected to a ground. The bond or ground, or both, shall be physically applied or shall be inherently present by the nature of the installation. This electrically conductive path shall have a resistance of not more than 5 ohms.

3005.8 Electrically isolated sections of metallic piping or equipment shall be bonded to the other portions of the system or grounded.

3005.9 Tank vehicles loaded or unloaded through open connections shall be grounded and bonded to the receiving system.

3005.10 When a flammable mixture is transferred from one portable container to another, a bond shall be provided between the two containers.

3005.11 Steel framing of buildings shall be grounded with resistance of not more than 5 ohms.

3005.12 Fire Protection. An approved fire alarm system shall be provided and all plant fire protection facilities shall be adequately maintained, periodically inspected and tested.

3005.13 Maintenance. The cleaning of tanks or vessels that have contained flammable or combustible liquids shall only be done under the supervision of persons who understand the fire and explosion potential.

3005.14 When necessary to make repairs involving "hot work," the work shall be authorized by the responsible individual in charge before the work is started.

3005.15 When necessary to enter a tank, pit, manhole or other confined spaces, such entry shall be authorized by the responsible individual in charge.

3005.16 Power-operated industrial trucks shall be of a type approved for the location.

3005.17 Open flames and direct-fired heating devices shall be prohibited in areas where flammable vapor-air mixtures may exist.

3005.18 Smoking shall be prohibited, except in designated areas.

3005.19 Empty containers previously used for flammable or combustible liquids shall be removed to a well-detached outside location and, if not cleaned on the premises, removed from the plant as soon as practical.

3005.20 Storage in containers outside of buildings shall conform to Chapter 16.

3005.21 Adequate aisles shall be maintained for the unobstructed movement of personnel and fire protection equipment.

CHAPTER 31

HIGH-PILED COMBUSTIBLE STOCK

SECTION 3101 GENERAL

3101.1 Scope. This Chapter shall apply to the storage of high-piled combustible stock. Factors, such as method and height of stock piling, combustibility of materials, fuel load and rate of heat release, areas and size of piles, aisles, automatic fire-extinguishing systems, smoke removal systems, building construction and fire separations, are considered in setting forth the provisions of this Chapter.

3101.2 Definition.

- (a) **High-Piled Stocks.** Buildings used or intended to be used for the storage of high-piled stock as defined in Subsection 3101.3 shall comply with the requirements of this Chapter.

3101.3 High-piled stock shall be combustible commodities or packaging materials that are placed in closely packed piles more than 15 feet high; that are stored in pallets or racks more than 12 feet high; or that are highly combustible materials placed in piles, stacks or racks more than 8 feet high. Combustible commodities include the following classifications:

- (a) Manufactured of combustible materials.
- (b) Wrapped or packaged in or protected by combustible materials.
- (c) Stored on combustible pallets or racks. Highly combustible commodities include the following:
 - 1. Rubber goods.
 - 2. High-hazard foam plastic products.
 - 3. Other materials that are subject to rapid combustion.

3101.4 Commodity is defined as combinations of product, packing material and container.

3101.5 Classification of Contents. The commodity classifications shall be listed in NFPA 231 and NFPA 231C with the following additions:

- (a) Class I Commodities:
 - 1. Appliances, electrical
 - 2. Beer or wine, up to 20 percent alcohol
 - 3. Cable and wiring on reels
 - 4. Cement in bags
 - 5. Ceramics
 - 6. Dairy products in non-wax-coated containers
 - 7. Dry insecticides
 - 8. Foods in noncombustible containers
 - 9. Fresh fruits and vegetables in non-plastic trays or containers
 - 10. Frozen foods

- 11. Glass
- 12. Glycol in cans
- 13. Gypsum board
- 14. Inert materials, bagged
- 15. Insulation, noncombustible
- 16. Metal products

(b) Class II Commodities:

- 1. Beer or wine, up to 20 percent alcohol in wood containers
- 2. Class I products, if in small cartons or small packages placed in ordinary corrugated carton
- 3. Incandescent or fluorescent light bulbs in cartons
- 4. Thinly coated fine wire on reels or in cartons.

(c) Class III Commodities:

- 1. Combustible fiberboard
- 2. Cork, baled
- 3. Feed, bagged
- 4. Fertilizers, bagged
- 5. Furniture (wood, natural fiber, upholstered, non-plastic, or wood or metal with plastic-padded and covered arm rests)
- 6. Lubricating or hydraulic fluid in cans
- 7. Lumber (stored flat)
- 8. Mattresses (excluding foamed rubber and foamed plastics)
- 9. Non-flammable liquids in plastic containers
- 10. Paints, oil base in cans
- 11. Paper and pulp, horizontal storage
- 12. Paper and waste, baled
- 13. Pillows (excluding foamed rubber and foamed plastics)
- 14. Plastic-coated paper food containers
- 15. Plywood
- 16. Rags, baled
- 17. Rugs (no foam backing)
- 18. Sugar, bagged
- 19. Wood, baled
- 20. Wood doors, frames and cabinets
- 21. Yarns (natural fiber and viscous)

(d) Class IV Commodities:

- 1. Alcohol (greater than 20 but less than 80 percent), in cans or bottles in cartons

2. Clothing, synthetic or non-viscous
3. Electronic equipment in foam plastics
4. Furniture, plastic upholstered
5. Furniture, wood or metal with plastic covering and/or padding
6. Linoleum products
7. Lumber (stored vertical)
8. Pharmaceuticals, alcoholic elixirs, tonics, etc.
9. Rubber goods
10. Rugs, foamed back
11. Shingles, asphalt
12. Thread or yarn, synthetic or non-viscous

(e) Special Hazard Commodities:

1. Alcohol, 80 percent or higher in bottles in cartons
2. Flammable and combustible liquids
3. Foam plastics and foam rubber
4. Lacquers (which dry by solvent evaporation), in cans or cartons
5. Paint cans, aerosol (LP-gas filled)
6. Pallets and flats, wooden
7. Paper, asphalt, rolled, horizontal storage
8. Paper, asphalt, rolled, vertical storage
9. Paper and pulp, rolled, vertical storage (unbeaded)
10. Plastic products, in cartons (ABS, styrene, polyethylene)
11. Rubber tires

3101.6 Automatic Fire-Extinguishing Systems. An approved automatic sprinkler system shall be installed in every building or part of a building used for storage of high-piled stock when the storage area is more than two-thirds of the area permitted by the *EPCOT Building Code*.

3101.7 The design and installation of automatic fire-extinguishing systems shall conform to NFPA 13, as modified by NFPA 231 and NFPA 231C.

3101.8 Smoke Removal. Smoke removal capability shall be provided in buildings protected by an automatic fire-extinguishing system and shall be designed to provide a minimum of six changes of air per hour at 100 percent exhaust to the outside.

3101.9 The fan capacity shall be based on an empty building.

3101.10 There shall be a minimum of two separate fans located in different locations of the same fire areas of the building.

3101.11 The system shall be designed for manual activation by separate control switches from the main power switches to the building lights and equipment.

3101.12 The control switches shall be located in an approved location.

SECTION 3102 ROOF VENTS, VENTING RATIOS AND DRAFT CURTAINS

3102.1 Smoke and heat vents shall be installed in accordance with the requirements of the *EPCOT Building Code* and this Chapter. Where there is a conflict between this Chapter and the *EPCOT Building Code*, the requirements of this Chapter shall apply. Smoke and heat vents shall be located as follows:

- (a) In Group B and I occupancies, more than 50,000 square feet in single floor area.
- (b) In Group H occupancies, more than 15,000 square feet in single floor area.

3102.2 Smoke and heat vents shall be installed in buildings housing mixed occupancies as required for the specific occupancy being considered.

3102.3 Type of Vents. Vents shall be fixed in the open position or shall open automatically by a rate-of-rise detector and may consist of skylights or windows in the exterior of the building. Vents shall be located at or near the highest elevation of the ceiling, no lower than the upper one-third of the smoke curtain. Where plain glass is used, protection to occupants from glass breakage shall be provided. Vents shall not be located within 20 feet of the adjoining property line.

3102.4 Releasing Devices. Devices for opening smoke and heat vents automatically shall be activated by temperature. The releasing device shall be operated normally at a maximum temperature of 165°F, but higher releasing temperatures may be approved by the Building Official. Non-corrosive materials shall be used for hinges, latches and related hardware.

3102.5 Size and Spacing of Vents. The effective venting area shall be the minimum cross-sectional area through which the hot gases pass to the atmosphere, and shall be not less than 16 square feet, with no dimensions less than 2 feet.

3102.6 The maximum center-to-center spacing of vents in the building shall be:

- (a) In Group B and I occupancies, 120 feet.
- (b) In Group H occupancies, 100 feet.

3102.7 Ratios of effective area of vent openings to floor area of the occupancy shall be:

- (a) In Group B and I occupancies, 1 to 100.
- (b) In Group H occupancies, 1 to 50.

3102.8 In rooms containing high-piled stock, ceiling shall be divided into areas not more than 20,000 square feet by approved noncombustible draftstops, constructed as required in the *EPCOT Building Code*, extending at least 2 feet below the ceiling. In lieu of draftstops, curtain boards and roof vents may be installed as provided in the *EPCOT Building Code*.

3102.9 In buildings containing an area of high-piled stock greater than 10,000 square feet, except when an automatic sprinkler system is installed, access shall be provided on both sides of the area. Doorways 3 feet wide and 6½ feet high, located in exterior walls at intervals not greater than 100 feet, shall be considered sufficient, except where steel roll-up doors or other types of doors are used that obstruct the access.

3102.10 Aisles. Aisles of not less than 44 inches in width shall be established to provide access to exits and fire department access doors. Aisles shall be provided to divide the storage into areas not to exceed 5,000 square feet.

3102.11 Access to Building. Access doors shall be provided at near ground level for fire-fighting purposes in accordance with the *EPCOT Building Code*, except as herein provided. There shall be at least one door not less than 3 feet in width and not less than 6 feet, 8 inches in height in each 100 lineal feet or fraction thereof of exterior wall provided on at least three sides of the building. Metal roll-up doors are not acceptable for such purposes unless approved by the Fire Official. Approved aisle ways shall be provided to these doors. When on-site fire hydrants are required, there shall be an access door provided opposite that location.

CHAPTER 32

MOTION PICTURE PROJECTION

SECTION 3201 GENERAL

3201.1 Scope. The provisions of this Chapter shall apply only to nitrocellulose film of any size of when ribbon-type motion picture film in excess of $\frac{7}{8}$ inch width and electric arc projection equipment is used.

3201.2 Installation and Use. No person owning, controlling or managing any motion picture projection equipment shall use or permit the use of such if damaged or worn to such extent that it creates a fire hazard.

3201.3 Every motion picture projection machine, except a portable type, shall be kept securely fastened to the floor.

3201.4 Every motion picture projection machine shall be enclosed in a motion picture booth as provided by the *EPCOT Building Code*.

3201.5 There shall be installed and maintained ready for use in every projection booth, not less than one approved fire extinguisher of at least a 5BC rating.

3201.6 No person shall smoke or maintain any other source of ignition within any projection booth; nor shall the manager or operator of any projection booth permit any person to smoke or to maintain any other source of ignition within said projection booth.

3201.7 Only qualified persons shall operate any motion picture projection machine.

CHAPTER 33

CRYOGENIC FLUIDS

CHAPTER 3301 GENERAL

3301.1 Scope. This Chapter shall apply to the storage, handling and transportation of cryogenic fluids as hereinafter defined. This Chapter is not intended to include LP gas as defined in this Code.

3301.2 Definitions.

- (a) **Below-Ground Container.** A storage installation in which the maximum liquid level in the container is below the surrounding grade or below a backfill berm, which is at least 10 feet wide at the top, and then slopes away from the container at a natural angle or repose, or is retained 10 feet from the container by a retaining wall, and constructed of earth, concrete, solid masonry or suitable material designed to prevent the escape of liquid.
- (b) **Container.** Any cryogenic vessel whether used for transportation or storage.
- (c) **Cryogenic Fluids.** Those fluids that have a normal boiling point below -200°F. (See Table 33A.)
- (d) **Cryogenic Inground Container.** A container in which the maximum liquid level is below the normal surrounding grade and is constructed essentially of natural materials, such as earth and rock, and dependent upon the freezing of water-saturated earth materials for its tightness or impervious nature.
- (e) **Cryogenic Vessel.** Any pressure vessel, low-pressure tank or atmospheric tank on which venting, insulation, refrigeration or a combination of these are used in order to maintain the operating pressure within the design pressure, and the contents in a liquid phase.
- (f) **Flammable Cryogenic Fluids.** Those cryogenic fluids that are flammable in their vapor state.
- (g) **Safety Factor.** The ratio of the design burst pressure to the maximum working pressure and shall not be less than four.
- (h) **System.** Any assembly of any equipment consisting of the container or containers, appurtenances, pumps, compressors and connecting piping.

SECTION 3302 CONTAINERS, EQUIPMENT AND DEVICES

3302.1 Approval. All containers, equipment and devices used for the storage, handling and transportation of cryogenic fluids shall be of a type, material and construction approved by the Fire Official as suitable for such use. Such approval shall be based upon nationally recognized standards.

3302.2 Containers, equipment or devices that are not designed and constructed in compliance with recognized standards may be approved by the Fire Official upon presen-

tation of satisfactory evidence that they are designed and constructed for safe operation.

3302.3 The following data shall be submitted with the application for approval:

- (a) Type and use of container, equipment or device.
- (b) Material to be stored, handled or transported.
- (c) Description showing dimensions and materials used in construction.
- (d) Design pressure, maximum operating pressure and test pressure.
- (e) Type, size and setting of safety devices.
- (f) Such other data as may be requested.

CHAPTER 3303 ELECTRICAL EQUIPMENT

3303.1 Electrical installations and equipment shall conform to the provisions of the *EPCOT Electrical Code*.

3303.2 Lighting, including emergency lighting, shall be provided for fire protection appliances and operating facilities, such as walkways, control valves and gauges, as may be required.

3303.3 Electrical Grounding or Bonding. Containers, systems and equipment used for flammable cryogenic fluids shall be grounded or bonded. Electrical grounding or bonding shall be provided as required by NFPA 77 and the *EPCOT Electrical Code*. The system shall be protected against corrosion, including corrosion caused by stray electrical currents.

3303.4 Warning Labels. Warning labels and signs shall be posted on containers and equipment, and at such locations as may be required by the Fire Official.

3303.5 Dispensing Areas. Dispensing of flammable cryogenic fluids, liquefied oxygen or liquid oxidizers shall be only at approved locations.

3303.6 Water line and hose shall be provided for cleaning area and melting ice.

3303.7 Storage Areas. Provisions shall be made in all flammable storage areas for controlling and extinguishing vent line fires.

CHAPTER 3304 CONTAINERS

3304.1 Design, Construction and Testing. Containers used for the storage and handling of cryogenic fluids shall be of approved materials and design. Materials shall meet all requirements as set forth in the *ASME Boiler and Pressure Vessels Code*, or shall be proven by test or listed in nationally recognized standards to have suitable mechanical properties for cryogenic use.

TABLE 33A
LOW-TEMPERATURE PHYSICAL PROPERTIES OF GASES^c

NAME	FORMULA	MOLECULAR WEIGHT	NORMAL BOILING POINT			CRITICAL POINT		TRIPLE POINT OR (MELTING POINT)		SPECIFIC HEAT CP@70(F, 14.7 psia Btu/(lb Mole) (°F)	GAS DENSITY @70(F, 14.7 psia (lb/ft ³)
			Temperature (°F)	Liquid Density (lb/ft ³)	Latent Heat (Btu/lb)	Mole Temperature (°F)	Pressure (psia)	Temperature (°F)	Pressure (psia)		
Air		28.96	-317.9	54.56	2556					7.0	0.07496
Argon	A	39.95	-302.6	86.98	2804	-187.6	705	-308.9	9.99	4.98	0.1034
Carbon Monoxide	CO	28.01	-311.9	49.3	2597	-220.4	508	-337.1	2.23	6.97	0.0725
Deuterium	D ₂	4.03	-417.3	10.7	540	-390.8	239	-426.0	2.48	6.97	0.0104
Fluorine	F ₂	38.00	-306.6	93.8	2815	-200.2	808	(-363.3)		7.49	0.0983
Helium	He	4.00	-452.13	7.798	36	-450.2	33	-455.8 ^d	7.35 × 10 ^{a, d}	4.98	0.01034
Hydrogen	H ₂	2.02	-422.99	4.418	398	-399.8	188	-434.5	1.044	6.89	0.005209
Krypton	Kr	83.80	-244.0	150.6	3884	-82.8	796	-250.9	10.62	4.98	0.2172
Methane	CH ₄	16.04	-258.6	26.5	3519	-116.6	670	-296.5	1.69	8.6	0.0416
Neon	Ne	20.18	-410.7	75.35	748	-379.7	395	-415.4	6.27	4.98	0.105215
Nitric Oxide	NO	30.01	241.0	79.3	5953	-137.2	945	-263.6	3.16	7.1	0.0777
Nitrogen	N ₂	28.01	-320.5	50.46	2405	-232.6	491	-345.9	1.82	6.98	0.07245
Oxygen	O ₂	32.00	-297.3	71.27	2932	-181.1	737	-361.8	2.10 × 10 ^b	7.02	0.08281

a. Based on data from the Compressed Gas Association Meeting, June 19, 1962.

b. Flammable.

c. Proximate composition of dry air (Mole percent): 78.09 N₂, 0.93 Ar, 0.03 CO₂.

d. λ (lambda) point.

3304.2 Metallic containers shall be built, inspected and tested in accordance with applicable provisions set forth in the ASME *Boiler and Pressure Vessels Code*, or with applicable provisions of API 620, *Recommended Rules for Design and Construction of Large Welded Low-Pressure Storage Tanks*, depending upon the temperature and pressure of the product stored.

3304.3 Concrete containers shall be built in accordance with the applicable provisions of the *EPCOT Building Code*. Barrier materials used in connection with concrete, but not functioning structurally, shall be materials authorized by the ASME *Unfired Pressure Vessel Code*.

SECTION 3305 CONTAINER PRESSURE RELIEF DEVICES

3305.1 Pressure containers shall be protected by a pressure relieving device or devices. If only one pressure relief device is used, it shall be set to operate at a pressure not to exceed the maximum allowable working pressure. Additional relief devices may be set to operate at a higher pressure but shall not exceed 110 percent of the maximum allowable working pressure.

3305.2 Containers subject to fire hazard exposure shall be protected by pressure relieving devices designed to protect against excessive pressure caused by fire exposure. Such devices shall be set to operate at a pressure not in excess of 110 percent of the maximum allowable working pressure, and

shall have a relieving capacity sufficient to prevent the pressure from rising more than 20 percent above the maximum working pressure. If only one device is used, it shall be set to operate at a pressure not to exceed the maximum allowable working pressure.

3305.3 Relief devices shall be located so that they are readily accessible for inspection and repair, and shall be protected. All relief devices shall be so designed or located that moisture will not collect and freeze in a manner that would interfere with the proper operation of the device.

3305.4 No shutoff valves shall be installed between relief valves and container, except that a shutoff valve may be used on multiple valve installations where the arrangement of the valves will provide full required flow through the relief devices at all times.

3305.5 Outer containers shall be equipped with pressure and vacuum relief devices or rupture discs to adequately protect the container.

3305.6 Heat exchangers and similar vessels shall be protected with a relieving device of sufficient capacity to avoid overpressure in case of an internal failure.

3305.7 Safety relief valves shall normally be mounted in a vertical position and shall not be subjected to low temperatures, except when operating.

3305.8 Relief vent piping shall be not less than the area of the relief valve and so arranged as not to restrict the flow.

3305.9 Relief devices and relief vent piping shall be so arranged that escaping gas will discharge unobstructed to the open air.

3305.10 Vents shall be installed in such a manner as to exclude or remove moisture and condensate, and to prevent malfunction due to freezing or icing. Drains shall be installed to prevent possible flame contact with the container, piping, equipment and structures.

3305.11 Insulation. Insulation shall be noncombustible and shall be non-reactive with oxygen-enriched air.

3305.12 Marking on Containers. Each container shall be identified by the attachment of a nameplate in an accessible place marked with the following information:

- (a) Builder's name and date built.
- (b) Nominal capacity, in gallons.
- (c) Maximum allowable working pressure.
- (d) Maximum permissible specific gravity of liquid to be stored.
- (e) Maximum level to which container may be filled with stored liquid.
- (f) Maximum level to which container may be filled with water for test.
- (g) Minimum temperature, in °F, for which container was designed.

3305.13 Filling Limits. A positive alarm or other approved device shall be provided to warn against overfilling.

SECTION 3306 STORAGE

3306.1 Installation of Above-Ground Containers. Containers shall be provided with concrete or masonry foundations, or structural steel supports on concrete or masonry foundations. Foundations and supports shall be of a material and design to withstand the low-temperature effects of cryogenic fluid spillage. Structural steel supports, exceeding 18 inches in height, for flammable cryogenic fluid containers, shall be protected with a coating having a 2-hour fire-resistive rating as specified in the *EPCOT Building Code*.

3306.2 Horizontal containers shall be mounted on foundations to permit expansion and contraction. Every container shall be supported to prevent the concentration of excessive loads on the supporting portion of the shell and shall be protected against corrosion.

3306.3 In areas subjected to flooding, containers shall be elevated or securely anchored.

3306.4 Storage containers, piping, valves, regulating equipment and other accessories shall be protected against physical damage and tampering.

3306.5 Containers shall be secured.

SECTION 3307 DRAINAGE

3307.1 Drainage, Dikes, and Walls for Above-Ground Containers. The area surrounding a container for cryogenic fluids shall be diked to prevent accidental discharge of fluids from endangering adjacent containers, buildings and equipment, adjoining property or reaching waterways. These provisions may be altered or waived when determined by the Fire Official that such container does not constitute a hazard, after consideration of special features, such as topographical conditions, nature of occupancy, proximity to buildings on the same or adjacent property, capacity and construction of containers, and character of fluids to be stored.

3307.2 A drainage system constructed to provide the required protection shall slope not less than 1 percent away from the container toward an impounding basin or an approved means of disposal having a capacity equal to the container being served. The termination area and the route of the drainage system shall be so located that a fire occurring in the drainage system will not endanger adjacent containers or property.

3307.3 Where diked areas are utilized to provide the required protection, the following shall apply:

- (a) More than one container may be installed in a single diked area provided:
 - 1. The usable volume of the enclosure shall be at least 100 percent of the capacity of the largest container enclosed.
 - 2. Containers shall be elevated above grade so that cryogenic liquid will not reach the outside container wall in the event of a liquid spill.
- (b) Dike walls shall be of earth or other materials designed to be liquid tight and to withstand thermal shock.
- (c) The dike and diked area shall be kept clear of all weeds, grass and other combustible material.
- (d) Containers of cryogenic fluids shall not be located within dikes enclosing flammable or combustible liquid containers, LP-gas containers or compressed gas containers.

SECTION 3308 LOCATION OF ABOVE-GROUND CONTAINERS

3308.1 A cryogenic fluid container or containers with an aggregate capacity in excess of 189,000 gallons (4,500 barrels) and their loading stations shall be located a minimum of 50 feet from buildings used for the production of such fluids. Such containers and their loading stations shall be located a minimum of 100 feet from above-ground storage of flammable or combustible liquids, and from any buildings of such construction or occupancy that constitute an exposure hazard to a container in the event of fire or explosion in said buildings. When the capacity is 189,000 gallons (4,500 barrels) or less, the distance required from above-ground storage of flammable or combustible liquids, and buildings that constitute an exposure hazard, shall be based upon the capacity of

the container or containers and the physical features of the installation, with 10 feet being the minimum distance required.

3308.2 The minimum distance from the edge of a flammable cryogenic container having a capacity in excess of 189,000 gallons to the nearest building not associated with the cryogenic liquid plant, or to the property line or public way shall be 200 feet, and in no case shall the distance from the dike surrounding the container or the distance from a drainage area be less than 100 feet from the nearest building, or the property line or public way.

3308.3 Containers and equipment used in the storage and handling of liquid oxygen shall be installed and maintained in accordance with NFPA 56A.

3308.4 A flammable cryogenic fluid container with a capacity of 189,000 gallons or less, but more than 30,000 gallons, shall be located not less than 100 feet from the nearest building not associated with the cryogenic liquid plant to the property line or public way, and in no case shall the distance from the dike surrounding the container or the distance from a drainage area be less than 100 feet from the nearest building, or the property line or public way.

3308.5 A flammable cryogenic fluid container with a capacity of 30,000 gallons or less shall be located in accordance with NFPA 50B.

SECTION 3309 INSTALLATION

3309.1 Below-Ground Concrete Containers. Tests shall be conducted, by qualified personnel, at the site to determine whether the soil within the expected freezing zone around the container is of the frost-heave-susceptible type. If it is determined that the soil is susceptible to ice-lens formation, select backfill of sufficient width shall be placed around the vessel to prevent excessive pressure from acting on the container or suitable means taken to insure that the zone of freezing will not extend into the frost-heave-susceptible soil.

3309.2 Below-ground concrete container shall be installed on foundations or supports of concrete, masonry piling, steel or a suitable foundation of aggregate, which shall have been designed and constructed in accordance with the *EPCOT Building Code*.

3309.3 The container storage area shall be fenced or otherwise protected. A minimum of two access openings shall be provided of sufficient size to accommodate emergency equipment.

3309.4 Cryogenic Inground Containers. Natural materials, such as earth, shall have adequate chemical and physical properties for the construction and operation of the container at the operating temperature.

3309.5 Containers shall be bottomed out in material naturally impermeable or made impermeable.

3309.6 Foundations of such structures shall be properly designed and constructed in accordance with the *EPCOT Building Code*.

3309.7 The container storage area shall be fenced or otherwise protected. A minimum of two access openings shall be provided of sufficient size to accommodate emergency equipment.

SECTION 3310 EXPOSURE

3310.1 Location of Below-Ground and Inground Containers with Respect to Exposure. The minimum distance from the edge of below-ground and inground flammable cryogenic containers to the nearest building, property line or public way, or from above-ground flammable or combustible liquid storage, shall be in accordance with Table 33B.

TABLE 33B

CONTAINER CAPACITY (gallons)	MINIMUM DISTANCE (feet)
Less than 500	5
500 to 1,000	25
Over 1,000	50

SECTION 3311 PIPING, PROCESS AND ACCESSORY EQUIPMENT AT MANUFACTURING FACILITIES AND CONSUMER SITES

3311.1 Piping Materials and Construction. All piping and materials, such as gaskets, thread compound, etc., shall be suitable for the intended use through the full range or pressure and temperature to which they will be subjected, maintaining a safety factor of four to one (4:1).

3311.2 The piping system shall be designed and constructed to provide adequate allowance for expansion, contraction, vibration, settlement and fire exposure.

3311.3 Joints on all containers, piping and tubing more than 2 inches nominal diameter shall be made by welding or with welded flanges.

3311.4 Piping outside buildings may be either buried or above ground. In either case, it shall be well supported and protected against physical damage and corrosion.

3311.5 All piping and tubing shall be tested after installation, at not less than 1½ times hydraulically or 1¼ times pneumatically the maximum working pressure and proven free of leaks.

SECTION 3312 VALVES AND ACCESSORY EQUIPMENT

3312.1 All valves and accessory equipment shall be suitable for the intended use at the temperatures of the application, and shall be designed for not less than the maximum pressure and minimum temperature to which they may be subjected, maintaining a safety factor of four to one (4:1).

3312.2 Shutoff valves shall be provided on all container connections. Shutoff valves shall be located as close as practicable to the containers.

3312.3 All liquid and vapor connections on flammable cryogenic fluid containers, except relief and gauging connections of more than a 1/2-inch pipe size, shall be equipped with check valves; or a remotely controlled, automatic quick-closing valve that shall remain closed, except during operating periods.

3312.4 Shutoff valves shall be installed in the piping system as required to limit the volume of liquids discharged in the event of piping or equipment failure. Relief valves shall be installed between shutoff valves in all pipelines.

3312.5 All inlet and outlet connections, except relief valves, liquid level gaging devices and pressure gages on any container, shall be labeled to designate whether they are connected to vapor or liquid space.

3314.3 In addition to the placard identifying the product, vehicles shall also bear other placards as may be required by the DOT; i.e., "FLAMMABLE GAS," "OXIDIZER," etc.

SECTION 3313 LOADING AND UNLOADING

3313.1 Loading and unloading shall be performed in such a manner as not to create an unsafe condition.

3313.2 Movement of vehicles, starting of engines, loading and unloading operations shall be controlled by personnel responsible for the area.

3313.3 Loading and unloading of oxygen shall not be permitted in the vicinity of loading or unloading of gaseous or liquid fuel.

3313.4 Parked vehicles shall have wheel chocks in place.

3313.5 Water or steam lines shall be provided for use in thawing piping and equipment.

3313.6 Sources of Ignition. Flammable cryogenic fluids, cryogenic oxidizers, liquefied oxygen, and flammable or combustible liquids shall not be loaded, unloaded, dispensed or handled where vapors may reach a source of ignition. Smoking shall be prohibited, except in designated areas. "NO SMOKING" signs shall be conspicuously posted.

3313.7 Electric ground or bonding wires shall be connected prior to connecting transfer hoses and shall not be removed until after transfer hoses have been removed from flammable cryogenic vehicles.

SECTION 3314 TRANSPORTATION

3314.1 Containers, Tanks and Vessels. Containers, tanks, and vessels used for transporting cryogenic fluids shall meet all applicable requirements of the Department of Transportation (DOT).

3314.2 Vehicles. Vehicles transporting cryogenic fluids are subject to requirements of this Code and shall:

- (a) Be placarded at the front, rear and on each side identifying the product. Placards shall have letters not less than 4 inches high using approximately a 5/8-inch stroke. Abbreviations shall not be used.
- (b) Be equipped with not less than one approved-type fire extinguisher, minimum rating 20BC.
- (c) Be equipped with adequate chock blocks.

CHAPTER 34

AIRPORTS, HELIPORTS AND HELISTOPS

SECTION 3401 GENERAL

3401.1 Scope. This Chapter shall apply to all airports, heliports, helistops and aircraft hangars.

3401.2 Dispensing Flammable or Combustible Liquids. No dispensing, transfer or storage of flammable or combustible liquids shall be permitted inside of any building or structure, except as provided in Chapter 16.

3401.3 No flammable or combustible liquid shall be dispensed into or removed from the fuel system of an aircraft within any aircraft hangar.

3401.4 No flammable or combustible liquid shall be dispensed into or removed from a container, tank, vehicle or aircraft, except in a location approved by the Fire Official.

SECTION 3402 APPLICATION, MAINTENANCE AND REPAIR

3402.1 The application of flammable finishes shall be done only in locations approved by the Fire Official.

3402.2 No person shall clean any aircraft, engines or parts of aircraft in an aircraft hangar within 50 feet of another aircraft, building or hangar with any flammable liquid having a flash point of less than 100°F.

3402.3 Every aircraft hangar shall be equipped and maintained with metal drip pans under the engines of all aircraft stored or parked therein.

3402.4 No open flame, flame-producing device or other source of ignition shall be permitted in any hangar, except in approved locations.

3402.5 “NO SMOKING” signs shall be provided in accordance with the provisions of Subsection 2608.2.

3402.6 No person shall run the engine of any aircraft in any aircraft hangar, except in approved engine test areas.

3402.7 All repairing of aircraft requiring the use of open flames, spark-producing devices or the heating of parts above 500°F shall be done in the open or in an area conforming to the provisions of the *EPCOT Building Code* for a Group H occupancy.

3402.8 Combustible Storage. No person shall store combustible materials or other hazardous materials in an aircraft hangar, except in locations and containers approved by the Fire Official.

SECTION 3403 PORTABLE FIRE EXTINGUISHERS

3403.1 Portable Fire Extinguishers. Portable fire extinguishers suitable for flammable liquid and electrical-type fires shall be provided as specified by the Fire Official.

3403.2 Every vehicle used for towing aircraft and every welding apparatus shall be equipped with at least one fire extinguisher having a minimum 5BC classification as designated in NFPA 10.

3403.3 Every aircraft refueler shall be equipped with a minimum of two 20BC fire extinguishers, as designated in NFPA 10. A fire extinguisher shall be readily accessible from either side of the vehicle.

3403.4 At every aircraft service station there shall be at least one fire extinguisher having a minimum 10BC classification, as designated in NFPA 10. Arrangement of extinguishers shall be such that no pump or dispenser is more than 50 feet from one such extinguisher.

3403.5 Use of any fire-extinguisher equipment under any circumstances shall be reported to the manager of the airport and the Fire Official immediately after use.

SECTION 3404 AIRCRAFT SERVICE STATION

3404.1 No person shall install, operate or maintain any aircraft service station, except in accordance with the provisions of Chapter 16.

3404.2 Transferring apparatus used or intended to be used for fueling aircraft shall be approved, installed, operated and maintained in accordance with the applicable provisions of this Chapter.

3404.3 Pumps. All pumps of a positive-displacement type shall be provided with a bypass relief valve set at a pressure of not more than 35 percent in excess of the normal working pressure of such unit. Such units shall be equipped and maintained with a pressure gauge on the discharge side of the pump.

3404.4 Dispensing Hose and Nozzle. Only hose that is designed for the transferring of hydrocarbon liquids will be permitted.

3404.5 The length of hose shall be limited to the actual needs of the individual transfer apparatus. Such hose shall be equipped with an approved shutoff nozzle. Fuel transfer nozzles shall be of the self-closing type, designed to be actuated by hand pressure only. No notches or other devices shall be used for holding the nozzle valve handle in the open position. Such nozzles shall be equipped with a grounding cable complete with the proper attachment for the aircraft to be serviced.

3404.6 Protection of Electrical Equipment. Electric wiring, switches, lights and other sources of ignition, when located in a compartment housing piping, pumps, air eliminators, water separators, hose reels, etc., shall be enclosed in a vapor-tight housing. Electric motors located in such a compartment shall be of a type approved for use as specified in the *EPCOT Electrical Code*.

3404.7 Venting of Equipment Compartments. Compartments housing piping, pumps, air eliminators, water separators, hose reels, etc., shall be adequately ventilated at floor level or within the floor itself.

3404.8 Accessory Equipment. Ladders, hose reels and similar accessory equipment shall be of an approved type.

3404.9 Ladders constructed of noncombustible material may be used with or attached to any aircraft refueler unit, provided the manner of attachment or use of such ladder is approved and shall not constitute any additional fire or accident hazard in the operation of such refueler unit.

3404.10 Hose reels used in connection with any such refueler unit shall be constructed of noncombustible materials, and provided with a packing gland or other device that will preclude fuel leakage between such reel and the fuel manifold in connection therewith.

3404.11 Bonding and Grounding. Every transfer apparatus shall be metallically interconnected with the tank, chassis axles and springs of every aircraft refueler unit.

3404.12 Every aircraft refueler unit shall be provided and maintained with a heavy-duty ground cable of sufficient length to be bonded to the aircraft to be serviced. Such cable shall be metallically connected to the transfer apparatus or chassis of the aircraft refueler unit on one end and shall be provided with a suitable metal clamp on the other end to be fixed to the aircraft.

3404.13 The ground cable shall be bare or have a transparent protective sleeve, and shall be carried on a reel or in a compartment provided for no other purpose in such a manner that it will not be subjected to sharp kinks or accidental breakage under conditions of general use.

3404.14 Regulations Not Covered. Any regulation not specifically contained herein pertaining to airports, aircraft hangars and appurtenant operations shall comply with nationally recognized standards.

SECTION 3405 REFUELER UNITS

3405.1 Construction of Aircraft Refuelers. Tank vehicles shall be designed and constructed in accordance with NFPA 385 and NFPA 407.

3405.2 Every aircraft refueler unit shall be equipped and maintained with an approved transfer apparatus.

3405.3 If such transfer apparatus is operated by an individual unit of the internal-combustion-motor type, such power unit shall be housed in a separate compartment located as remotely as practicable from any pumps, piping, meters, air eliminators, water separators, hose reels, etc. The fuel tank in connection therewith shall not exceed 5 gallons. The exhaust pipe, muffler and tail pipe shall be shielded.

3405.4 Gears, chains, shafts, bearings, housing and all parts thereof shall be of an approved design.

3405.5 Flexible connections for the purpose of eliminating vibration may be permitted provided such connections do not exceed 24 inches in length.

SECTION 3406 MAINTENANCE

3406.1 The following regulations shall apply to the operation, maintenance and use of aircraft refueler units, in addition to all other applicable provisions of this Chapter.

3406.2 Aircraft refueler units shall be stored outside of, and not less than 50 feet from, any buildings.

3406.3 Mechanical repairs on such units shall be made at approved locations.

3406.4 Every aircraft refueler unit shall be provided with a visible sign indicating the name of the person, firm or corporation operating such unit.

SECTION 3407 FUELING AND DEFUELING

3407.1 Aircraft refueler units shall not be located or parked under any portion of any aircraft, nor in any position where such unit would obstruct egress from any aircraft should fire occur during fuel transfer operations.

3407.2 Every aircraft refueler unit shall be electrically bonded to the aircraft being refueled or defueled, and either the aircraft refueler unit or the aircraft shall be adequately grounded in an approved manner. A drag chain or flexible ground conductor shall not be deemed to fulfill the requirements of this Section for grounding during fuel transfer.

3407.3 Transfer nozzles shall be equipped with approved bonding conductors, which shall be clipped or otherwise positively engaged with the bonding attachment provided on the aircraft adjacent to the fuel tank cap.

3407.4 All bonding and ground connections required by this Section shall be made prior to any fuel transfer and shall not be disconnected until fuel transfer operations are completed.

3407.5 During fuel transfer operations, a qualified person shall be in control of each transfer nozzle and another qualified person shall be in immediate control of the fuel pumping equipment to shut off or otherwise control the flow of fuel from the time fueling operations are begun until they are completed. For underwing refueling, the person stationed at the point of fuel intake is not required.

3407.6 Fuel transfer nozzles shall not be held in the open position by any device other than by the direct hand pressure of the operator.

3407.7 Qualified Operator. Aircraft refueler units shall be attended and operated only by persons instructed in methods of proper use and operation, and who are qualified to use such refueler units in accordance with minimum safety requirements. Each qualified operator shall be required to carry on his person an identification card issued by his employer certifying his qualifications.

3407.8 Protection of Hose. Fuel transfer hose shall be properly placed on the approved reel; or in the compartment provided; or, may be stored on top decking or refueler, if proper height rail is provided for security and protection of such equipment before any aircraft refueler unit is moved. Such transfer hose shall not be looped or draped over any part of the refueler unit, except as herein provided, nor shall fuel

transfer hose be dragged when such refueler unit is moved from one fueling position to another.

3407.9 Maintenance. Every aircraft refueler unit and all equipment used in connection therewith shall be maintained in a safe operating condition and in good repair at all times.

3407.10 Any aircraft servicing equipment that is found to be defective or in a state of disrepair, and by reason of such defect or state of disrepair the use of such aircraft servicing equipment constitutes an undue fire hazard, the Fire Official shall order the use of such equipment discontinued until such repairs, replacements or changes are made as may be required to render the same safe for continued use.

3407.11 Loading and Unloading. Aircraft refueler units shall be loaded only at an approved loading rack, except when defueling an aircraft, such unit may be loaded from the fuel tanks of aircraft.

3407.12 The fuel cargo of any such unit shall be unloaded, only by approved transfer apparatus in to the fuel tanks of aircraft, underground storage tanks or approved gravity storage tanks.

SECTION 3408 PASSENGERS

3408.1 Passenger traffic may be permitted during the time fuel transfer operations are in progress, provided the following provisions are strictly enforced by the owner of such aircraft or his authorized employee.

3408.2 No person shall smoke or produce any open flame in the cabin of the aircraft or on the outside thereof within 50 feet of such aircraft.

3408.3 A qualified employee of the air vehicle owner shall be responsible for seeing that the passengers are not allowed to smoke when remaining aboard the aircraft, nor while going across the ramp from the gate to such aircraft or vice versa.

3408.4 Passengers shall not be permitted to linger about the plane, but shall proceed directly between the loading gate and the aircraft.

3408.5 Passenger loading stands shall be left in loading position until all fuel transfer operations are completed.

3408.6 Fuel transfer operations shall not be performed on the main exit side of any aircraft containing passengers, except when the owner of such aircraft or a capable and qualified employee of such owner shall remain inside the aircraft to direct and assist the escape of such passengers through regular and emergency exits in the event fire should occur during such fuel transfer operations.

3408.7 Smoking, Open Flame and Service Equipment. No person shall smoke or produce any open flame within 50 feet of any point where fuel is being transferred; nor shall any electrical or motor-driven device be connected to or disconnected from any aircraft at any time fueling operations are in progress on such aircraft.

SECTION 3409 HELISTOPS

3409.1 General. Helistops on buildings that have been constructed in accordance with requirements of the *EPCOT Building Code*, or other locations, must be maintained in accordance with this Chapter.

3409.2 Clearance. The touchdown area shall be surrounded on all sides by a clear area having a minimum average width at roof level of 15 feet, but no width less than 5 feet, and shall be so maintained.

3409.3 Flammable Liquid Spillage. Landing areas on structures shall be so maintained as to confine any flammable liquid spillage to the landing area itself and provisions shall be made to drain such spillage away from any exit or stairway serving the helicopter landing area or from a structure housing such exit or stairway.

3409.4 Exit Ways. Exit and stairways from helistops shall be maintained in compliance with Chapter 12, except that all landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet in length, or less than 2,000 square feet in area, the second exit may be a fire escape or ladder leading to the floor below.

3409.5 Federal Aviation Approval. Before operating helicopters from helistops, approval must be obtained from the Federal Aviation Administration.

CHAPTER 35

COVERED MALL BUILDINGS

SECTION 3501 GENERAL

3501.1 Scope. This Chapter shall apply to those occupancies within the scope of covered mall buildings as regulated in the *EPCOT Building Code*.

3501.2 Special Provisions. Unoccupied tenant space shall be isolated from the remainder of the covered mall building until such time as space is prepared for use.

3501.3 The unoccupied tenant space shall be:

- (a) Kept free from the storage of any materials whatsoever.
- (b) Separated from the remainder of the building by partitions of 1/2-inch-thick gypsum wallboard or the equivalent.
- (c) Without doors or other access openings, other than one door that shall be kept key locked in the closed position, except during that time when opened for inspector.
- (d) Kept free from all combustibles waste and be broom swept clean.
- (e) Protected by an automatic sprinkler system.

3501.4 Display of motor vehicles, watercraft or equipment with internal combustions engines shall be in accordance with Section 2507.

3501.5 No temporary kiosk, display, booth, concession equipment or the like shall be placed in a mall without first obtaining a permit from the Fire Department, nor shall any such equipment be placed within those areas of the mall established for exit purposes by the *EPCOT Building Code*.

3501.6 No covered kiosk, display, booth, concession equipment or the like shall be permitted to exceed 4 feet in width, unless the areas beneath such equipment is protected by the sprinkler system.

3501.7 All decorative materials and signs of paper, cardboard, cloth, hay, moss, grain, leaves and other vegetation other than that which is alive shall be made flame retardant by the application of approved flame retardants.

3501.8 The use of open flame or flame-producing devices within the mall is prohibited, except under such conditions as may be specified by a permit issued at the discretion of the Fire Official.

3501.9 The presence of LP gas, liquefied natural gas or compressed flammable gas cylinders is prohibited within the mall.

3501.10 Compressed gas cylinders of non-flammable gases shall be secured to prevent overturning. Control valves shall be protected against possible damage.

3501.11 The mall shall not be used as a place of assembly, unless a permit is first obtained. Such permit shall limit the number of persons in attendance to the exit facilities provided. The permit shall establish the conditions necessary to

assure that covered mall building tenants do not have their normal operations obstructed by the assembly. It shall be the responsibility of the covered mall management to provide adequate personnel to comply with the conditions of the permit.

3501.12 Required widths of exit travel shall not be obstructed by the placement of any materials whatsoever while the covered mall building is open.

CHAPTER 36

GROUP S-4 OCCUPANCIES AND MANUFACTURED BUILDINGS

SECTION 3601 SCOPE

3601.1 This Chapter shall apply to Group S-4 occupancies, including mobile homes, manufactured buildings, recreational vehicles, trailers and portable buildings.

SECTION 3602 DEFINITIONS

3602.1 Cluster. The locating of two or more individual units or groups with allowable separation and connected by a common walkway or deck, and may be used by one or more tenants.

3602.2 Grouping. The physical connecting of two or more independent units, with no separation between units, to form one larger unit for use by a single tenant; excluding those units designed and manufactured as multiple units when assembled become one unit.

3602.3 Manufactured Buildings. A structure, transported on a separate vehicle in one or more sections, designed to be used as dwelling, commercial, institutional, storage, industrial structures with permanent foundation, which may include plumbing, heating and air conditioning, and electrical manufactured in accordance with the Florida Manufactured Building Act of 1979, in Section 553, Part IV, of the Florida Statutes, administered and promulgated by the Rules and Regulations of the Florida Department of Community Affairs (DCA).

3602.4 Mobile Home. Any residential unit constructed to standards promulgated by the US Department of Housing and Urban Development, and administered by the Florida Department of Transportation and the Florida DCA.

3602.5 Portable Building. A structure built for support, shelter or enclosure of persons, animals, chattels or property of any kind, and capable of being carried or moved about.

3602.6 Recreational Vehicle. A vehicular-type unit primarily designed as temporary living quarters for recreational, camping or travel use, which either has its own motive power or is mounted on or towed by another vehicle. The basic entities are: travel trailer, camping trailer, truck camper and motor home, as defined in Chapter 320 of the Florida Statutes.

3602.7 Temporary Construction Trailer. A temporary building used for construction purposes has been defined as any building or shed that is temporary, does not exceed 8 feet in width and 32 feet in length, is used for the storage of materials and equipment, and may include a small office for a construction superintendent to use for functions that are exclusively for construction purposes. Temporary manufactured buildings, which meet this definition, are exempt from the requirements of the following: accessibility, DCA approval, sealed engineering, energy calculations and emergency egress illumination.

3602.8 Trailer. An automotive-drawn vehicle, mounted on wheels, designed to serve wherever parked as a dwelling.

SECTION 3603 REQUIREMENTS

3603.1 Access. Access to mobile homes, manufactured buildings, recreational vehicles, trailers and portable buildings shall be in accordance with Subsection 1407.1.

3603.2 Separation. Separation between mobile homes, manufactured buildings, recreational vehicles, trailers and other similar units shall be a minimum horizontal, clear and unobstructed clearance of 15 feet.

3603.3 Separation between mobile homes, manufactured buildings, recreational vehicles, trailers, portable buildings and a permanent structure shall be a minimum horizontal, clear and unobstructed clearance of 25 feet.

Exception: When the permanent structure has a fire-rated wall exposed to the Group S-4 occupancy, the distance may be reduced to 15 feet with the Building Official's approval.

3603.4 Electrical Systems. All applicable electrical systems and equipment shall be in accordance with the *EPCOT Electrical Code*.

3603.5 Storage and Handling of LP Gases. Storage and handling of LP gases shall be in accordance with Chapter 20.

3603.6 Storage and Handling of Flammable and Combustible Liquids. Storage and handling of flammable and combustible liquids shall be in accordance with Chapter 16.

3603.7 Removal of Brush, Weeds and Rubbish. The area underneath and within 15 feet of mobile homes, manufactured buildings, recreational vehicles, trailers and portable buildings shall be kept clear of dry brush, weeds and rubbish.

3603.8 Skirts. The Fire Official may require the installation of skirts of at least 75 percent solid material around the perimeter of units used for any occupancy other than residential.

3603.9 Blocking, Anchoring and Securing. All such units covered by this Chapter shall be secured by piers, tie-downs, anchors or other approved methods in accordance with the *EPCOT Building Code*.

3603.10 Fences and Windbreaks. A fence or windbreak shall not be located closer than 3 feet to any unit covered by this Chapter.

3603.11 Fire Protection. Non-residential mobile homes, manufactured buildings, trailers, or portable buildings that are 400 square feet or more of floor space, shall be provided with an approved product of combustion detector. Each detector shall be connected to a central monitoring station, if available. If a central monitoring station is not available, an outside audible alarm shall be installed.

**SECTION 3604
CLUSTER OR GROUPING**

3604.1 Mobile homes, recreational vehicles, trailers, portable buildings and manufactured buildings may be arranged in clusters and/or groups when a minimum fire water flow of 1,000 gallons per minute is accessible.

3604.2 Covered walkways, platforms and decks shall be sprinkled and square footage shall be added to square footage of units since they are considered as one building.

3604.3 Separation of groups or clusters shall be in accordance with this Chapter.

3604.4 Construction Site Locations. All such units covered by this Chapter and utilized as construction offices or storage facility shall comply with the separation requirements set forth in this Chapter and the *EPCOT Building Code*.

3604.5 Semi-Trailers. Semi-trailers used for storage may be parked in groups of four trailers with a minimum separation between groups of 15 feet.

3604.6 Portable buildings of less than 800 square feet each, used for other than residential purposes, may be set up to a maximum group of four. Separation between portable buildings and permanent structures shall be a minimum horizontal (clear and unobstructed) clearance of 25 feet.

CHAPTER 37

MOTION PICTURE AND TELEVISION SOUNDSTAGES

SECTION 3701 SCOPE

3701.1 This Chapter shall apply to the construction, alteration, repair, maintenance and operations of motion picture and television soundstages, hereinafter referred to as studios, and associated structures and locations utilized in the production of motion picture and television programs.

SECTION 3702 DEFINITIONS

3702.1 Means of Egress. A continuous path of travel from any point in a building or structure to the open air outside at ground level and consists of three separate and distinct parts:

- (a) **Exit.** That portion of a means of egress that is separated from the area of the building from which escape is to be made, by walls, floors, doors or other means that provide the protected path necessary for the occupants to proceed with reasonable safety to the exterior of the building.
- (b) **Exit Access.** That portion of a means of egress that leads to an exit.
- (c) **Exit Discharge.** That portion of a means of egress between the termination of an exit and a public space.

3702.2 Special Effects. Articles containing any pyrotechnic composition manufactured and assembled, designed or discharged in connection with television, theater or motion picture production, which may or may not be presented before live audiences, and any other articles containing any pyrotechnic composition used for commercial, industrial, educational, recreational or entertainment purposes when authorized by the Fire Official or his authorized representative.

3702.3 Studio. An establishment, room or building in which motion pictures are made or where radio or television programs are produced or where recordings are made.

SECTION 3703 SEPARATION CLEARANCE AND FIRE LANE REQUIREMENTS

3703.1 Studios, as defined in this Chapter, require a minimum 60 feet separation on all sides from other buildings.

3703.2 Every studio hereafter constructed shall be accessible to fire department apparatus by way of a fire lane with an all-weather driving surface of not less than 25 feet of unobstructed width, with adequate turning radius for fire apparatus as determined by the Fire Official.

3703.3 The required fire lane shall be located in the center portion of the required separation clearance.

3703.4 The required width of the fire lane shall not be obstructed in any manner, including the parking of vehicles.

3703.5 The fire lane shall be conspicuously marked on the driving surface in a manner acceptable to the Fire Official.

SECTION 3704 EXITING REQUIREMENTS

3704.1 Studios shall have exits located at not more than 100-foot intervals on all perimeter walls.

3704.2 Catwalks shall have at least two means of exit, one of which may be a ladder. No catwalk shall have more than one 20-foot dead end.

3704.3 There shall be maintained a minimum of 6 feet clear and unobstructed width between studio exterior walls and all sets, cycloramas and scenery to provide access to exits, fire-fighting equipment and utility controls.

3704.4 In every studio or structure applicable to this Chapter, means of egress shall be so maintained as to provide free and unobstructed egress from all parts of the building or structures at all times, and so as to be available for full instant use in case of fire or other emergency.

3704.5 Interior decorations, sets, cycloramas or scenery shall not be permitted to obscure, conceal or confuse exit doors, exit signs or exit pathways.

3704.6 Exit access and exit discharge shall be so maintained as to provide a reasonably straight path of travel unimpeded by railings, barriers, gates or obstructions of any manner.

SECTION 3705 FLAMEPROOFING

3705.1 All stage scenery, such as, but not limited to, muslin covered flats, drapes, curtains, cycloramas, backings, bushes, trees and sets, shall be made flame retardant.

SECTION 3706 DRESSING ROOMS

3706.1 On-Stage Dressing Rooms. A maximum of three portable dressing rooms may be placed inside the soundstage area.

3706.2 Portable dressing rooms shall be separated by a minimum distance of 6 feet from another portable dressing room and shall be separated from walls, scenery, sets and cycloramas by a minimum distance of 6 feet.

3706.3 The location of portable dressing rooms shall not obstruct exit access or an exit.

3706.4 The Fire Official shall cause to be inspected all motion picture and television soundstages, associated structures, and locations utilized in the production of motion pictures and television programs for the purpose of ascertaining and causing to be corrected any conditions that would reasonably tend to cause fire or contribute to its spread, or any violation to this Code and of any other law or standard affecting fire safety.

SECTION 3707 STANDBY FIREWATCH REQUIREMENTS

3707.1 Whenever it is essential for public safety due to the nature of the performance, exhibition, display or activity, the Fire Official may:

- (a) Require the employment of one or more experienced fire services personnel to be on duty at such place; or
- (b) Require the employment of one or more personnel other than fire service personnel to be on duty at such place.

3707.2 Standby firewatch means a person or persons assigned the dedicated task of roving patrol for the sole purpose of detecting fire, sounding the necessary alarm, confining and/or extinguishing fire.

3707.3 All standby firewatch personnel shall be subject to the Fire Official's directions at all times when so employed.

SECTION 3708 TEMPORARY ELECTRICAL WIRING

3708.1 All temporary electrical wiring shall be in accordance with the *EPCOT Electrical Code*.

SECTION 3709 EMERGENCY LIGHTING AND POWER

3709.1 Emergency lighting and power shall be in accordance with the *EPCOT Building Code*.

SECTION 3710 DISPLAY OF MOTOR VEHICLES INSIDE STUDIOS

3710.1 Display of motor vehicles inside studios shall be in a manner acceptable to the Fire Official.

3710.2 Functions not specifically covered in this Chapter shall be evaluated on an individual basis by both the Reedy Creek Emergency Services and the Department of Building and Safety.

3710.3 No function evaluated in Subsection 3710.1 shall be considered as precedent setting.

SECTION 3711 FIRE PROTECTION REQUIREMENTS

3711.1 Studios shall be sprinklered in accordance with NFPA 13 as an extra hazard location and as specified in the *EPCOT Building Code*.

3711.2 Automatic sprinkler systems shall be maintained in accordance with NFPA 13 and NFPA 25.

3711.3 All sprinkler systems shall be supervised facilities as prescribed in the *EPCOT Building Code*.

3711.4 Fire hose shall be installed in all fire hose cabinets in all studios and associated structures utilized in the production of motion pictures and television programs. Fire hose cabinets shall be installed accordance with NFPA 14.

3711.5 Portable fire extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. The number and type of portable fire extinguishers needed to protect the building shall be determined by the Fire Official. Portable fire extinguishers shall be maintained in accordance with NFPA 10.

3711.6 All studios or associated buildings utilized in the production of motion pictures or television programs shall be provided with approved fire hydrants connected to a water system capable of supplying the fire flow required by the Fire Official. The location and number of such hydrants shall be approved by the Fire Official.

SECTION 3712 PERMIT REQUIREMENTS

3712.1 A permit shall constitute permission to maintain, store or handle materials; conduct processes that produce conditions hazardous to life or property; or to install equipment used in connection with such activities.

3712.2 Such permit shall not be a substitute for any license required by law.

3712.3 A permit shall be required for the following activities:

- (a) Any use of open flame, such as, but not limited to, fire-places, barbecues, torches, candles, flares, campfires and similar flame-producing devices.
- (b) Spraying operations, such as, but not limited to, painting, application of plastic resins, polyurethane foam and similar applications.
- (c) Special effect operations – a permit shall be required for special effects whether indoors or outdoors. Use of pyrotechnics or flammable liquids and/or gases shall be considered to be special effects. Handling and storage of explosives and/or blasting caps.
- (d) Live audience shows and/or audience on stage.
- (e) Placement of trailer, mobile homes, motor homes, auxiliary equipment and similar units adjacent to the sound-stage building.

3712.4 A permit shall not be transferable and any change in the conditions of the permit shall require a new permit.

3712.5 A permit shall continue until revoked or for such a period of time as designated at time of issuance.

3712.6 Before a permit may be issued, the following conditions shall be completed:

- (a) Application a minimum of 24 hours prior to function.
- (b) Application for filming vehicle or watercraft fires and/or blowing up vehicle or watercraft shall be made a minimum of seven calendar days prior to the filming of such.
- (c) Submit three sets of accurately scaled plans depicting the proposed activity. One set shall be returned to the applicant either approved or disapproved. Any changes desired from approved plans shall require resubmitting plans for approval.

- (d) Application for a permit shall be made in the form prescribed by the Fire Official and contain the following information:

1. Verbal description of function.
2. Specific time and date of function.
3. Name of responsible person in charge of the function, if other than applicant.
4. Specific location of function.
5. Signature of applicant.

- (e) The Fire Official or his authorized agent shall inspect and approve the receptacles, vehicles, buildings, structures, storage areas and locations to be used.

3712.7 In cases where laws or regulations enforceable by departments other than the Fire Department are applicable, joint approval shall be obtained from all departments concerned.

3712.8 All permits issued under this Chapter shall require that the applicant, his agents and employees shall carry out this proposed activity in compliance with all the requirements of this Chapter and any other laws or regulations applicable thereto, whether specified in the permit or not, and in complete accordance with the approved plan and application.

3712.9 A permit issued under this Chapter may be revoked when it is found by inspection or otherwise that:

- (a) The permit is used for a location or establishment other than that for which it was issued.
- (b) The permit is used for a condition or activity other than that listed in the permit.
- (c) Conditions and limitations set forth in the permit have been violated.
- (d) There have been any false statements or misrepresentations as to a material fact in the application for permit or plans submitted or a condition of the permit.

3712.10 The Fire Official shall act upon an application for permit without unreasonable delay.

3712.11 When issued, such permit shall remain on the premises designated therein and shall at all times be subject to inspection.

SECTION 3713 LIVE AUDIENCE SHOW

3713.1 Occupant Load. The maximum occupancy load for any live audience show shall be limited by a seating plan approved by the Reedy Creek Emergency Services and the Department of Building and Safety. Any studio with permanent fixed seating shall have the occupant content determined as set forth in the *EPCOT Building Code*.

3713.2 Spacing of Seats. Spacing of seats for a live audience shall be in accordance with the *EPCOT Building Code*.

3713.3 Exits and Aisles. When a live audience is present, there shall be available a minimum of two exterior exits on opposite sides of the seating area. Each seating area shall have a minimum of:

- (a) Two exits from the rear of each seating area; and
- (b) Two exits from the front of each seating area.

3713.4 All seating areas shall be provided with a clear and unobstructed aisle around the perimeter of the seating area of not less than 6 feet.

3713.5 The location of television cameras, motion picture cameras and other equipment in the audience area is prohibited.

3713.6 No standing shall be allowed (except ushers) in exit aisles serving audience areas.

3713.7 No loose chair shall be located in the audience seating areas.

3713.8 Exit lights shall be illuminated.

3713.9 There shall be provided proper lighting or illumination of aisles, exit access, exits and exit discharge.

3713.10 Hand-held microphones may be used in the audience seating area when the length of cable does not exceed 15 feet. Cable shall be removed from exit aisles prior to admitting audience and before the audience leaves the studio.

3713.11 No aisle in the audience seating area shall be less than 42 inches in clear and unobstructed width.

SECTION 3714 SMOKING

3714.1 Prohibited Locations. Smoking shall be prohibited within any soundstage or studio building.

3714.2 Upon admitting the audience, a responsible person shall cause the "NO SMOKING" announcement to be made in the studio.

3714.3 Smoking will be allowed on stages only when such activity is required by script or is a normal part of the action to impart and create the proper mood or scene. The cigarette, cigar or pipe shall be lighted and extinguished on stage.

SECTION 3715 TRAILERS, MOTOR HOMES AND AUXILIARY EQUIPMENT ADJACENT TO STUDIOS

3715.1 Permit Required. The location of trailers, motor homes and auxiliary equipment adjacent to studios shall be approved by the Fire Official.

3715.2 Location. No trailer, motor home or auxiliary equipment shall be located on the exterior of a studio in such a manner that safe egress from the required exit facilities will be obstructed.

SECTION 3716 TELEVISION REMOTES AND MINI-CAMERAS

3716.1 Mini-cam trucks shall be parked in such a manner as to keep fire lanes, hydrants, and access and egress doors clear and unobstructed.

3716.2 Mini-cam crews operating with tape recorders shall avoid blocking, impeding or obstructing any aisle, exit access, exit or exit discharge.

3716.3 When using microwave relay, the crews shall position broadcast dishes, tripods and accessory equipment in such a manner as to avoid excess lines, extension cords and equipment. The placement shall be approved by the Fire Official to assure the unimpeded egress of people without hazard from equipment cable or light cords.

3716.4 When laying cable from mini-cams back to the truck for taping or microwave relay, crews shall lay the cables against walls, doorjambs or the safest possible route. For safety, cables will be flown whenever possible. When this is not possible, cables shall be taped to the floor and ramped at any point where they cross a pedestrian traffic area, such as, but not limited to, aisles, hallways, steps and doorways.

CHAPTER 38

HAZARDOUS MATERIALS

SECTION 3801 GENERAL

3801.1 Scope. The purpose of this Chapter is to establish the requirements for the prevention, control and mitigation of dangerous conditions created by the presence of hazardous materials. Hazardous materials are those chemicals or substances defined as such in Chapter 4.

3801.2 The general provisions shall apply to all hazardous materials, including those regulated elsewhere in this Code. When a material presents multiple hazards, then all hazards shall be addressed.

3801.3 The provisions of this Chapter, related to health hazards as defined in this Chapter, are waived when the Fire Official charged with the enforcement of this Code has determined that such enforcement is preempted by other codes, statutes or ordinances.

3801.4 Permits. For permit requirements, see Chapter 3.

3801.5 The following is a list of hazardous materials and/or operations regulated by other Chapters and Sections of this Code that may require a permit for certain specified quantities and operations. (See Table 38A.)

3801.6 Hazardous Material Management Plan. When required by the Fire Official, each application for a permit shall include a Hazardous Materials Management Plan (HMMP). The official may accept a similar plan required by other regulations.

3801.7 Hazardous Materials Inventory Statement. When required by the Fire Official, each application for a permit

shall include a Hazardous Materials Inventory Statement (HMIS).

SECTION 3802 REQUIREMENTS

3802.1 General. The storage, dispensing, use and handling of hazardous materials shall be in compliance with the provisions of this Code.

3802.2 Release of Hazardous Materials. Hazardous materials shall not be released into a sewer, storm drain, ditch, drainage canal, creek, stream, river, lake or tidal waterway, or upon the ground, sidewalk, street, highway or into the atmosphere, except for the following:

- (a) Materials used for weed abatement, erosion control, soil amendment or similar applications when applied in accordance with the manufacturer's specifications.
- (b) Materials released in accordance with federal, state or local governmental regulations.

3802.3 Unauthorized Discharge. In the event of an unauthorized discharge of hazardous materials, the following requirements shall apply:

- (a) Any person, firm or corporation responsible for any non-permitted discharge shall provide accurate records of the non-permitted discharge of hazardous materials, including the date, time, material and quantities.
- (b) Provisions shall be made for controlling and mitigating non-permitted discharges.

**TABLE 38A
REGULATED HAZARDOUS MATERIALS/OPERATIONS**

MATERIAL/CONDITION	EPCOT FIRE PREVENTION CODE CHAPTER	NFPA STANDARD
Cellulose Nitrate Plastics	7	42
Combustible Fiber	8	
Compressed Gases	9	50/50A/99
Cryogenic Liquids	33	50/50A
Dry Cleaning	10	32
Explosives Blasting Agents	12	495
Fireworks	13	1123/1124
Flammable and Combustible Liquids	16	30/30A/329
Fumigation and Thermal Insecticidal Fogging	17	385/386/395
Hazardous Chemicals	19	491M
Liquefied Petroleum Gas	20	58
Magnesium	22	480/651
Cellulose Nitrate Film	6	40
Organic Coatings	30	35
Welding and Cutting Operations	29	51/51B

HAZARDOUS MATERIALS

- (c) Whenever any non-permitted discharge due to primary container failure is discovered, the involved primary container shall be repaired or removed from service.
- (d) Any person, firm or corporation responsible for any unauthorized discharge shall institute and complete all actions necessary to remedy the effects of such non-permitted discharge, whether sudden or gradual, at no cost to the jurisdiction. When deemed necessary by the Fire Official, cleanup may be initiated by the Fire Department, or by an authorized individual or firm. All costs associated with such cleanup shall be borne by the owner, operator or other person responsible for the non-permitted discharge.

3802.4 Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall be readily available on the premises for all hazardous materials.

3802.5 Identification. Visible hazard identification signs as specified in NFPA 704 shall be put at all entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities in excess of the exempt amounts. Individual containers, cartons or packages shall be conspicuously marked or labeled in accordance with nationally recognized standards.

3802.6 Construction Requirements. Buildings, portions thereof and control areas in which hazardous materials are located shall be constructed as required in the *EPCOT Building Code*.

3802.7 Personnel Training and Written Procedures. Persons responsible for the operation of areas in which hazardous materials are stored, dispensed, handled or used shall be familiar with the chemical nature of the materials and the appropriate mitigating actions necessary in the event of fire, leak or spill. Responsible persons shall be designated and trained to be liaison personnel for the Fire Department. These persons shall aid the Fire Department in preplanning emergency responses and identification of the locations where hazardous materials are located, and shall have access to MSDS and be knowledgeable in the site emergency response procedures.

3802.8 Facility Closure Plan. The permit holder or applicant shall submit a plan to the Fire Official to terminate storage, dispensing, handling or use of hazardous materials at least 30 days prior to facility closure. The plan shall demonstrate that hazardous materials that were stored, dispensed, handled or used in the facility have been transported, disposed of or reused in a manner that eliminates the need for further maintenance and any threat to public health and safety.

SECTION 3803 HAZARDOUS WASTE

3803.1 Individuals charged with the responsibilities of hazardous waste operations and the storage shall comply with Federal Regulations 40 CFR, Part 261, and 40 CFR, Part 262.

3803.2 Sites. Individuals charged with the responsibility of maintaining hazardous waste sites shall comply with Federal Regulations 40 CFR, Part 261, and 40 CFR, Part 262.

APPENDIX A

ADOPTION OF THE APPENDICES OF THE EPCOT FIRE PREVENTION CODE

SECTION A-101 ADMINISTRATION

A-101.1 Scope. The appendices identified herein shall be enforced in accordance with the provisions of this Code.

SECTION A-201 APPENDICES

A-201.1 Legality. The appendices identified in this Subsection are legally a part of this Code and their provisions shall be enforced by the Fire Official.

- (a) **Appendix A.** Adoption of the Appendices of the *EPCOT Fire Prevention Code*
- (b) **Appendix B.** Indoor Pyrotechnic Displays
- (c) **Appendix C.** Disposal of Pyrotechnic Products

APPENDIX B

INDOOR PYROTECHNIC DISPLAYS

SECTION B-101 DISPLAYS

B-101.1 Scope. The provisions of this Chapter shall apply to all indoor pyrotechnic displays.

B-101.2 General. The display of fireworks (pyrotechnics) inside buildings or portions of buildings classified as public assembly occupancies may be permitted in accordance with requirements established by the Fire Official.

B-101.3 Requirements. The following requirements are established by this Code:

- (a) Permit(s). Permit requirements are specified in Chapter 3. A permit shall require a 14-day prior approval to show date.
- (b) The pyrotechnic operator shall have the following licenses:
 1. Bureau of Alcohol, Tobacco and Firearms. License 34—User of low explosives.
 2. Bureau of Alcohol, Tobacco and Firearms. License 21—Manufacturer of low explosives.

Note: License 21 is only required if the operator plans to use binary flash powders.
- (c) The pyrotechnic operator shall submit to the Fire Official either a resume or log book denoting the previous experience of the operator for the production in question.
- (d) If the log book is supplied, the Fire Official or his designated representative will sign the log signifying inspection of the log book.
- (e) The operator shall submit a plan showing:
 1. Location of the site performance.
 2. Exact distances of all pyrotechnics from audience, performers, staging, sets, properties and curtains.
 3. Legend showing symbols for each pyrotechnic with number of each and, for binary powders, the load values.
 4. Listing of pyrotechnics to be used in the show with amounts and description of cueing in the show.
- (f) The operator will supply a Certificate of Insurance with a minimum value of \$2 million. This certificate will include, as additional insured, the facility where the performance will occur and also the District.
- (g) At the Fire Official's discretion, a representative demonstration of any or all effects will occur in the facility of performance prior to issuance of the permit.
- (h) Reedy Creek Emergency Services Fire Prevention personnel shall be present for all such pyrotechnic shows

and will have the authority to cancel the show for just cause, including but not limited to:

1. Violation of permit.
 2. Change of show product without approval.
 3. Violation of approved safety distance.
- (i) Standards for facility use will be determined for each facility by prior testing. This will determine a standard show that can be marketed by the facility. Any change to the standard show may be requested and a demonstration of the proposed change will be required. The Fire Official may either approve or disapprove the requested change.
 - (j) No smoking will be permitted in a room having a pyrotechnic set/up show.
 - (k) No operator shall fire a show unless he, or an approved assistant with voice contact, has full view of the devices at time of discharge.
 - (l) All firing switches, including battery and power-circuit types, shall be designed to insure against accidental firing by providing:
 1. An automatic short circuiting shunt across the firing leads until the switch is intentionally thrown to the firing position.
 2. An automatic positive disconnection when switch is released by the operator.
 3. Firing boxes shall be designed to prevent firing unless the switch is manually operated.
 - (m) All electrically fired pyrotechnic circuits shall be tested for continuity and/or extraneous current flow with an approved blasting galvanometer or digital volt meter. These devices shall not input sufficient energy to initiate the device being tested.
 - (n) All devices shall be electrically fired.
 - (o) All pyrotechnic devices fired during the production shall be separated by a minimum safety distance from the audience equal to 1½ times the diameter of the effect. At no time will any pyrotechnic be closer than 15 feet to the audience.
 - (p) It will be the responsibility of the operator to properly dispose of used and all misfired products.
 - (q) The operator shall have a minimum of four portable fire extinguishers on site during the set up, firing and strike of the show. Two, 2½-gallon pressurized water extinguishers and two, 20-pound carbon dioxide extinguishers shall be provided.

APPENDIX C

DISPOSAL OF PYROTECHNIC PRODUCTS

SECTION C-101 GENERAL

C-101.1 Scope. The provisions of this Chapter shall apply to the disposal of all classes of pyrotechnic products in the District.

C-101.2 General. The disposal of pyrotechnic products may be permitted in accordance with requirements established by the Fire Official.

C-101.3 Requirements. The following requirements are established by this Code:

- (a) Approval shall require a 14-day notice prior to the disposal date.
- (b) All products that are unused, damaged or misfired shall be returned to the distribution facility.
- (c) A disposal site shall be in an isolated area in accordance with requirements established by the Fire Official.
- (d) The disposal operation shall be supervised. The disposal technician shall hold a license or permit and follow the Bureau of Alcohol, Tobacco and Firearms' rules and regulations. Trainees not holding the required permit shall work under the supervision of persons holding such permits.
- (e) Technicians shall be allowed to use a kerosene and gasoline mixture.
- (f) A hole shall be deep enough to hold a 55-gallon drum. The top of the drum shall be 6 to 8 inches below ground level. The hole shall be covered using chain-link fencing and secured to avoid any product from traveling any distance. A chain-link cage should also be used. Product amounts placed in the drum can be one-third to one-half full. Product amounts shall not exceed one-half of the drum capacity.
- (g) Detonation devices shall be an approved type.
- (h) All personnel shall maintain a safe distance in accordance with the manufacturer's recommendations at the disposal sites.
- (i) Fire apparatus will be on standby.
- (j) Unauthorized personnel shall not be present during disposals.
- (k) Unusual circumstances not covered in this Code shall follow Section 7-6 of NFPA 495, *Disposal of Explosive Materials*, as a guideline.
- (l) Lift charges shall be removed from the casing and disposed of in accordance with the manufacturer's recommendations.
- (m) Pyrotechnic products that contain multiple effects shall be separated from other compounds and disposed of in accordance with the manufacturer's recommendations.

- (n) Loose powder (flash powder) shall be free of other compounds.

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